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Washington Highlights

The Department of Commerce has made another request for a plan voluntarily covering an allocation of 16,000 tons of steel. The steel would go to manufacturers of storage tanks of 10,000 gallons capacity or larger to be designed for petroleum product terminals or bulk storage plants. This program failed of approval by the steel advisory body because the recommendation of the inter-agency governmental group was not unanimous. The State Department, OIL and ECA representatives were not in accord with the program in view of the resulting decrease in the amount of steel available for export under the Marshall plan. Application of the Commerce Department was supported by statements from the Interior Department and the Armed Services Petroleum Board explaining possibility of development of a critical situation next year if added storage facilities for domestic finished oil productions were not made immediately available.

Interior Secretary J. A. Krug has accepted the resignation of Max W. Ball, director of the oil and gas division of the Interior Department.

Walter F. George, Georgia Democratic Senator, who will return as chairman of the Senate finance committee, said in a recent interview that an excess profits tax would lead to business destruction. He stated that if it became necessary to increase revenue, he will favor a boost of the normal corporation rate.

The total number of natural gasoline plants in the country have declined. Nevertheless, a marked increase in the industry's capacity to produce is indicated during the last two years in a biennial survey made public by the Bureau of Mines. In the two-year period from January 1, 1946 to January 1, 1948, capacity of natural gasoline plants was increased from 426,860 barrels to 507,670 barrels daily.

Congress will be asked by the Interior Department to vote some $800,000,000 to begin a synthetic gasoline and oil industry program. It would be viewed as the first installment on a program mapped out to construct enough commercial plants to overcome a fuel shortage in the event of war. Estimated total cost is $12,000,000,000. Advocates of the program include Defense Secretary James Forrestal and Secretary of Interior Krug. A Federal program is deemed necessary because synthetics cannot be turned out yet at a cost low enough to compete with petroleum products.

Sam Rayburn, Texas Democrat, will mount the House of Representatives speaking stand January 3. He won't be unfamiliar to the chair occupied by Republican Joe Martin during the past two years. The Texan gaveled the House in the 77th, 78th and 79th Congress. In the presidential campaign, no member of Congress labored more vigorously for the Democratic cause than Rayburn. He spoke in nine states from Oklahoma to Pennsylvania.

The Navy is preparing to widen the hunt for oil at its petroleum reserves at Point Barrow, Alaska. Geological and geophysical parties are ready to move in to conduct work preliminary to the drilling of a number of test wells.

Predictions here and there point to possible recognition by the Democratic 81st Congress of state ownership of submerged tidelands. Members of the House returning to Washington in January will include 198 who voted for state ownership in the 80th Congress and only 26 who voted against the bill.

America's oil industry is foreseen as drilling more than 40,000 wells throughout the country in the full 1948 year. Petroleum economists point out this figure will mark a new all-time peak. Some 33,000 wells were sunk last year.

Major General L. P. Whitten, U. S. Air Force and member of the Armed Service Petroleum Board, has suggested a number of measures which could be taken to stretch available oil supplies. He stressed the importance of secondary recovery, strict controls over primary production and development of the tidelands and synthetic fuels. He expressed belief that stockpiling is necessary to build up oil reserves for military requirements.

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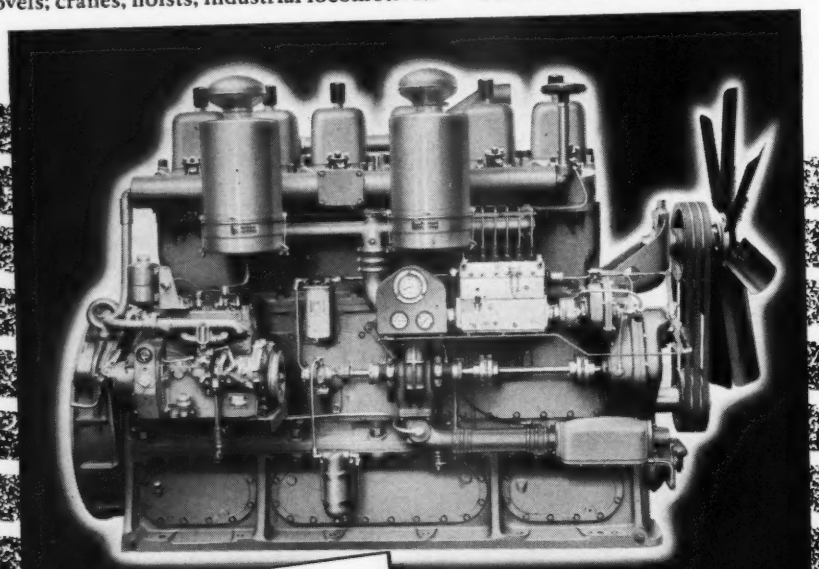

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BULLETIN No. 1454

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The Role of Research in Production of Oil

ABSTRACT

The need is stressed for an expanded program of research in the production of oil which embraces the exploration, drilling, producing, and field processing operations of the petroleum industry. Increasing demands for products and declining rate of discovery of new domestic reserves have emphasized the necessity for developing new and improved methods for locating accumulations of oil and gas, and for increasing the economic recovery from known accumulations by improving both primary- and secondary-recovery practices.

The present scope and the recent rapid growth of research in the United States are reviewed. It is estimated that about 15 per cent of the total research expenditures of oil companies, representing about 11,000,000, was spent on production research in 1947. Some 1,500 persons, about half of whom are professionally trained scientists and engineers, are employed in production research laboratories. In addition, a substantial cooperative program carried out at academic and commercial institutions has been sponsored by the industry.

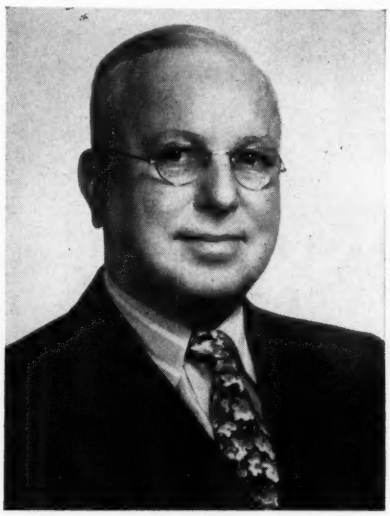
Some of the many achievements of production research are enumerated. These represent principally the results of applied research which must draw upon the store of knowledge accumulated by basic or fundamental research. To achieve the goals of a readily justified expanded program of production research requires that renewed emphasis be given to broadening industry support of fundamental research projects.

E. G. GAYLORD

California Research Corp., San Francisco, Calif.

INTRODUCTION

This paper has in its title two words which it might be well to define so that we shall be sure to understand one another. The first of these is "research," which we believe can be defined as any effort by which we acquire new knowledge. Two kinds of research are generally recognized: 1, basic or fundamental; and, 2, applied. The first of these implies the means by which we extend the general fund of basic knowledge without regard to the immediate application of that knowledge. Applied research uses the general fund of basic knowledge for direct application to specific



E. G. Gaylord

problems, such as developing new or improved methods or products. The second word in our title which we wish to define, at least for the purpose of this paper, is "production." Here it is used, in its broad sense, to include exploration or the finding of oil, and drilling, as well as the actual recovery of oil from the earth.

During the past two decades research related to the production of oil has grown from a feeble beginning into a major effort. Some of this research now is, and much more should be, of a fundamental nature. Of necessity, however, the majority of the work is applied research directed toward the development of new methods and tools, or toward the improvement of the present ones, for the finding of and recovering of crude oil, natural gas, and gasoline from the underground pools nature has provided. Concurrently, of course, extensive technical service work is being done, at both low and high technical levels, to maintain maximum efficiencies in our present methods, but this paper is not concerned with this aspect of laboratory work.

Need for Research

With the definition of research given in the opening paragraph in mind, it is evident that research is needed, and that it can be justified most readily whenever it is recognized that certain information or know-how is lacking which in ultimate objective will make it possible to do more things easier, quicker, and cheaper. Ever since the industrial revolution, and more particularly since World War I, our nation has led all others in applied research and development. The result has been the mass production of many new and improved articles of comfort and convenience available to everyone. Our nation is well-known for, and can be justifiably proud of, the high standard of living which these contributions have made possible.

Although given less consideration by industry in the past, fundamental research has demonstrated its potentialities, most forcibly perhaps with the atom bomb which grew out of academic investigations of Becquerel, Madame Curie, and others—started even before the turn of the century. Here, however, applied research took over once the potentialities of the fundamental idea became known, viz., that the atom could be split in a chain reaction, with the release of a tremendous amount of energy per unit of mass.

In order that applied research may have adequate scientific foundations for advancement, it is essential that fundamental research have a prominent place in an industrial program. Too often research organizations are cluttered up with attempts at improving some relatively insignificant process or "gadget" with the result that these efforts in the aggregate are more

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than those directed toward the more important objective of making some fundamental or outstanding advance in an industry.

Competition such as exists in our industries stimulates research, and leads to improved practices and economies of operation. Just as the automobile of today is vastly improved in comfort and performance over the one of 20 years ago, so today are our exploration, drilling, and production methods and tools vastly improved through research.

Developments resulting from research, however, often increase the requirements for certain raw materials by increasing their utility. In the oil industry the demand for petroleum products has increased to an unprecedented high level, and has caused us to take a critical look at our supply of raw materials—our underground reserves. According to recent estimates, the demand this winter will reach approximately 6,000,000 bbls. per day of crude-oil and natural-gas liquids plus imports, and the demand may be expected to increase.

New reserves are becoming increasingly difficult to find and more expensive to exploit domestically. Based on American Petroleum Institute figures, more oil was produced in 1947 than was added to our reserve by the discovery of new pools and extensions to old pools. This situation is not yet too alarming; but, if the American oil industry is to continue to meet the major part of the high demand for crude oil from domestic sources and maintain a strategic supply in the event of national emergency, one or all of the following must be done:

a. Find new reserves through the development of new and better exploration tools and more economical exploitation methods.

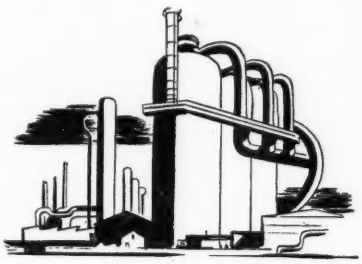
b. Develop new methods to obtain more oil from known reservoirs than is possible at present.

c. Develop synthetic liquid fuels.

d. Develop methods for the economic mining of vast oil-shale deposits.

Achievement of these broad objectives is the goal of production research by the oil industry and other interested agencies. The incentives for achievement of these objectives are considerable and, in turn, justify expanded expenditures for production research.

For example, last year in excess of 9,500 unproductive wells were drilled in the United States out of a total of approximately 33,000 i.e., roughly one-third. Although some of these unproductive wells may have cost as much as $500,000, one may conservatively estimate the average cost to be on the order of $30,000. Thus expenditures approaching 300 million dollars were made by the oil industry in 1947



in unsuccessful attempts to discover new reserves. Despite the many advances in geologic and geophysical prospecting methods, penetration of the earth by a drilling bit is still the only reliable (and very costly) method available to prospect for petroleum reserves; and even that method has failed under unusual circumstances. Part of the lack of success may be attributed to drilling difficulties. Even those wells which were completed as oil producers added, on the average, only 100,000 bbls. each to the nation's reserves, whereas hundreds of wells exist today which have produced 10 times that amount. From the foregoing one must conclude that the success in exploring for oil was not outstanding in 1947. An annual expenditure of at least $10,000,000, representing only 3 per cent of the cost of dry holes, would seem easily justified to provide operating geologists, geophysicists, and drilling engineers with speedier, cheaper, and more reliable tools, or with interpretive methods for present tools, to facilitate the exploration of the remaining possible oil-productive areas of the United States.

According to API statistics, domestic reserves on January 1, 1948, were estimated at 21.5 billion barrels. When this reserve is added to all the oil produced in the United States to January 1948, the total is approximately 56 billion barrels. Laboratory and field studies indicate that, even with the improved recovery methods in use today, there will be left underground as uneconomic, on the average, at least half of the oil originally in place. One might estimate, therefore, that at least 60 billion barrels of oil will remain underground in known oil fields as unrecoverable unless some new and economically feasible controlled methods are developed and used to augment and stimulate the native energy in these reservoirs. If only 10 per cent of this oil could be rendered economically recoverable by intensive and extensive research, more than 6 billion barrels of oil might be added to the nation's reserve. Assuming that only 1 per cent of the value of this increased reserve at $2.00 per barrel is spent on research over the next 5 years, the annual expenditures would be on the order of $25,000,000.

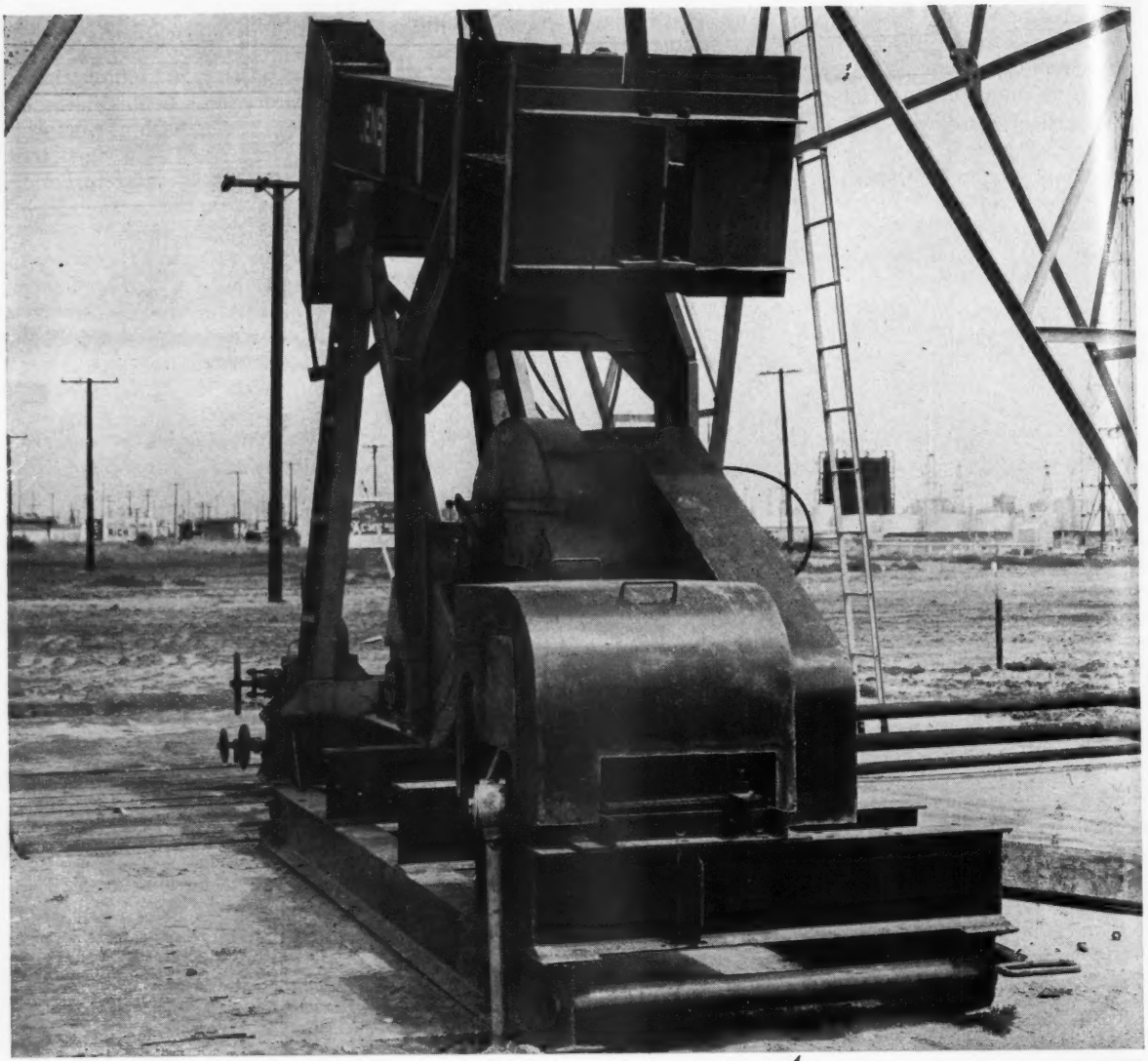
Scope of Research

Total expenditures on research and development projects in the United States in 1937 by the federal government, industry, universities, and others amounted to 238 million dollars. By 1947 these expenditures had increased almost 6-fold to 1 billion 385 million dollars.

During the same period money spent by industrial organizations on their own behalf increased nearly 5-fold, from 160 to 750 million dollars annually. In addition, in 1947 industrial laboratories undertook, under contract, about 350 million dollars of the federal government's total program of 550 million dollars for research and development. Thus last year industry was doing research and development work at an annual rate of about 1 billion 100 million dollars.

During the 10-year period between 1937 and 1947 it is estimated that the number of industrial research laboratories in the United States grew from 2,000 to 2,600, and the number of employees from 50,000 to 150,000.

It is estimated that the entire petroleum industry in the United States is spending from 70 to 75 million dollars annually in its own research laboratories. More than



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10,000 people are employed in these laboratories, about half of whom are professional technical personnel.

Because of the many companies involved, large and small, it is difficult to estimate the magnitude of the total program devoted to research in the production of oil. However, it is believed reasonable to assume that 15 per cent of the total petroleum-industry program is devoted to this phase. Thus we may conclude that some 1,500 people are spending about 11 million dollars annually in this endeavor.

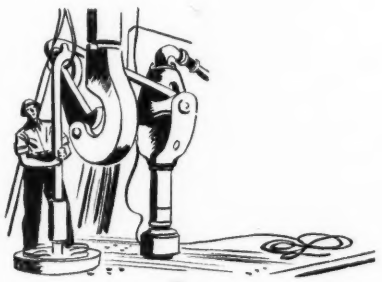
Many of the major producing oil companies or their affiliates operate facilities for carrying out this type of research. The Texas Company, Carter (Standard of New Jersey), Shell, Phillips, Stanolind (Standard of Indiana), Calif. Research, (Standard of California), Gulf, Atlantic, Union, Magnolia (Socony-Vacuum), and others are represented in this group. Personnel in these laboratories includes almost all of the scientific and engineering professions. Physicists, chemists, mathematicians, geologists, paleontologists, microbiologists, and other scientists may be found, as well as chemical, mechanical, electrical, and petroleum engineers. Moreover, the laboratories are generally well equipped with the "tools of the trade" of these professions. Their staffs are substantially self-sufficient except when occasions arise where some highly specialized talent is required, in which case use is made of academic or commercial services on a consulting basis.

A number of the organizations mentioned are expanding their operations in production research. Shell, The Texas Company, Atlantic, and California Research have just completed new laboratories for production research. Continental Oil Company recently organized a development and research department, and announced its intention of undertaking a substantial production research program.

Based on these expanded activities, it may be estimated that of the order of 2,000 people will be employed and that 15 to 20 million dollars will be budgeted on production research in 1949.

A number of the smaller producing oil companies having limited or no research facilities of their own are contracting for their research at research foundations and universities, such as Armour, Batelle, Southwest, Penn State, University of Texas, and Stanford Research Institute.

When a research project is of a non-competitive nature or is too broad in scope to be undertaken by a single company, it is desirable, and often expedient, for industry to cooperate in sponsoring such a project.



The American Petroleum Institute is a logical agency to coordinate cooperative fundamental research projects. The API-sponsored research projects are financed by contributions from members of the Institute. These projects are subdivided broadly into two categories: one dealing with composition and properties of petroleum, of primary interest to refiners; and the other dealing with occurrence and recovery of petroleum, of interest to production men. In the latter category all of the projects are located in university laboratories with a faculty member as director. To assist and advise the directors, each project has an advisory committee composed of several technical representatives from the industry. These advisory committees are, in turn, responsible to the main Advisory Committee on Fundamental Research on Occurrence and Recovery of Petroleum for the efficient conduct of the work. This committee, and a similar committee representing the projects of interest to refiners, are finally responsible to the Research Committee of the Board of Directors.

The results of the researches are made generally available through publication.

During the past 10 years these research projects have increased in number and scope. The budget for fiscal 1948-49 provides $251,000 for refining research and $148,870 for production research.

API Project 37, "Fundamentals of Hydrocarbon Behavior," is located at the California Institute of Technology, Pasadena, Calif. For some years now this project has been concerned primarily with the determination of the volumetric and phase behavior of single- and multicomponent hydrocarbon systems. The fundamental thermodynamic data on many hydrocarbon systems, which have been accumulated and published singly over the years, have been extended, and they will be republished next year in a monograph: **Thermodynamic Properties of Hydrocarbons.**

API Project 43, "Transformation of Organic Material into Petroleum," is subdivided among three institutions, as follows:

Project 43a is located at Scripps Institution of Oceanography, La Jolla, Calif. The work at Scripps is devoted to a study of microörganisms, first to determine the occurrence and activity of bacteria at depth and their relationship to the chemical and geologic character of the sediments and, second, to determine the utilization of molecular hydrogen by bacteria and its transfer in organic systems. Results to date indicate that certain sulfate-reducing bacterial strains can transform organic material into paraffin hydrocarbons under laboratory conditions.

Project 43b is located at The Pennsylvania State College, State College, Pa., and is concerned with studies in the fields of chemistry, bacteriology, and physics. Here, among other things, an attempt is being made to determine whether the occurrence of optical rotation, found in all petroleum, can be used to characterize the material chemically.

Project 43c is located at Massachusetts Institute of Technology, Cambridge, Mass. Here, for example, organic materials extracted from recent sediments are subjected to radioactive bombardment to determine whether, and how much,

hydrocarbon material can be so produced. Work is also under way to relate the existence and strength of natural radioactivity to depth and type of sediment.

API Project 47, "Mechanism of the Displacement of Oil from Porous Materials," is located at the University of California, Berkeley, Calif. The work under way to date represents a small beginning to the overall goal of determining the fundamental mechanisms governing the movement of oil through, and its displacement from, porous rocks. The advisory committee for this project is working energetically to expand materially the scope of this important fundamental research which is aimed at developing sufficient basic information so that the efficiency of our recovery methods may be improved appreciably.

API Project 49, "Clay Mineral Standards," is located at Columbia University, New York. This is a new project, started this year, to determine the fundamental properties of a large number of clay samples representative of the types found both in the United States and Europe. These fundamental data are essential to projected studies of recent sediments.

The main advisory committee is now reviewing an extensive program presented to it by the American Association of Petroleum Geologists. It is also seriously considering setting up a project on recent sediments which would involve expenditures of some $200,000 per year for at least 3 years.

In addition to these formalized research projects, the Institute in the past has made contributions to the Bureau of Mines and other organizations for special investigations. At the present time it is providing a grant-in-aid of $5,000 annually to the University of Chicago to assist Professor H. C. Urey in basic studies to determine whether there is a definite relationship between the isotopic composition of oxygen in living marine matter or in fossils, and the temperature at which the animal grew. It is hoped that information on the temperatures of the oceans in past geologic time may be obtained in this manner.

Cooperative research of the type sponsored by the Institute prevents unnecessary duplication of effort by industry laboratories, and is to be encouraged to the maximum extent possible. For example, a carefully drawn-up expanded program under research Project 47 might well replace much of the duplication of fundamental research effort that must exist in the many industry laboratories doing fluid-flow research today. There are, however, one or two basic objections to such a proposal under the present organization of the Institute. First of all, the coordination and direction of all the research projects are accomplished by the voluntary, gratuitous, part-time efforts of a few interested industry members. A full-time coordinator of production research is a "must" if any greatly expanded program of production research is to be undertaken. We feel this is merely a temporary solution, however, as we believe the Institute should, and eventually will, consider the establishment of a Division of Research within the Institute. Cooperative fundamental research within the industry is now so-well recognized as a proper and necessary effort that it would seem almost unbelievable that the Institute can logically continue its present hand-to-mouth policy with respect to this activiy.

Pennsylvania Grade Crude Oil Association, representing a group of operators in the Bradford area in Pennsylvania, maintains a laboratory at Bradford devoted primarily to research and development related to increasing oil recovery by "secondary" methods, such as water flooding. Originally this research was supported entirely by the Pennsylvania operators, but recently the industry in general has been invited to participate. Significant results are published regularly in the **Producers Monthly,** published by the association. A minimum budget of $75,000 was proposed for 1948 to be expanded, as facilities permitted, to $150,000. In addition to the Bradford laboratory part of the work is being done under contract by the School of Mineral Industries at The Pennsylvania State College and at the Armour Research Foundation in Chicago.

Drilling Research, Inc., a new corporation formed by several interested producing oil companies for the express purpose of conducting research to develop new methods to drill oil and gas wells, is another example of cooperative research effort.

The Natural Gasoline Association of America is conducting a cooperative research study of condensate-well corrosion. As a part of this study, it sponsors a research project at The University of Texas. This group has done much to evaluate the use of alloy steels and inhibitors for reducing corrosion in oil wells.

Many universities and colleges are conducting research of interest to the oil industry. Much of the work is made possible through research grants and fellowships. It is estimated that industry as a whole supplies on the order of 2,000 such grants and fellowships, of which the oil industry supplies at least 300 at an estimated cost exceeding $500,000 annually.

An interesting announcement was made recently in relation to academic participation in production research. This was the organization of the Texas Petroleum Research Committee, which is to carry out a cooperative research program sponsored jointly by The University of Texas and the Texas Agricultural and Mechanical College for investigation of fundamental problems relating to the recovery of petroleum. The two colleges will work in cooperation with the Railroad Commission of Texas in developing the program. A total of $100,000 has been provided to carry out the

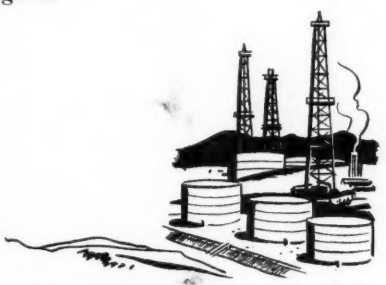
first year's program, each college contributing $50,000. It is of interest that much of the revenue received by these colleges is in the form of oil royalties from state lands.

Stimulated by the growing needs of the oil industry, a number of equipment manufacturers and supply companies are doing research and development work to improve equipment, supplies, and services. Improved bits are available through continuing research by the drilling-bit manufacturers. Chemical companies and materials suppliers are doing their share in developing improved drilling fluids and treating chemicals. Geophysical exploration service companies are striving continually to improve seismic exploration methods and techniques. Improvements in the obtaining and interpretation of electrical well logs are being made by the electric logging service companies. Core-analysis procedures are being improved by the research efforts of companies offering this service to the industry. These are but a few of the many groups serving the oil industry which are doing research and development work to improve practices and reduce costs.

The U. S. Bureau of Mines is actively engaged in research on synthetic fuels, improving both primary- and secondary-recovery methods, and other problems of interest to the oil industry. The experiment stations at Franklin, Pa.; Laramie, Wyo.; and Bartlesville, Okla., are participating in this work. In addition, the bureau is active in oil-shale mining experiments in a pilot-scale operation at Rifle, Colo. It is estimated that the bureau is spending for these research activities on the order of $8,000,000 of its present total annual research budget of approximately $19,200,000.

Accomplishments of Production Research

All of the research organizations mentioned herein have contributed to the total advances in oil production techniques. Knowledge gained from research work in other industries has also been of considerable value. No laboratory development to date has been a success until tried in the field. Only by a spirit of cooperation between research and operating organizations, and between oil producers and equipment and supply manufacturers, can the laboratory findings be developed and exploited in an optimum manner. For the most part this cooperation has been moderately good. Managements of research organizations have been farsighted in making results of non-competitive research available to industry through publication. Technical meetings and discussions between operating and research personnel in the American Petroleum Institute, the American Institute of Mining and Metallurgical Engineers, the American Association of Petroleum Geologists, and other technical societies have stimulated a free exchange of ideas for the common good.



An enumeration of some of the developments which have been made, and of research which is under way, should prove rather enlightening, and should indicate something of the broad nature of the types of tools and methods in use today and the way in which research is assisting in the production of oil.

The accuracy of the seismic prospecting method has been improved by better instruments and techniques to record and interpret the sound waves reflected and refracted from subsurface rocks and, thus, to determine more precisely the location of the types of rock structures which experience has indicated may contain petroleum. Another exploration tool, the gravity meter, which determines structural features on the basis of areal anomalies in the gravitational field of the earth, has been substantially improved. The magnetometer which locates structures on the basis of areal anomalies in the earth's magnetic field has been developed into an airborne instrument. Through an application of radar (shoran) the geographical surveying associated with the use of any of these instruments has been facilitated, with the result that exploration of vast under-water areas on the continental shelf has been simplified. Research is under way to determine whether telluric currents or their perturbations (known to exist in the earth and believed to be caused by forces outside our planet) can be used as significant indices in prospecting for oil. These instruments are all "divining rods," if you wish, inasmuch as none of them has proved infallible; nonetheless, they are based on sound scientific principles, and their worth already has been established in the location of many prolific oil fields in areas where geologic control was inadequate and where the surface topography gave no clues as to the attitude of the underlying sedimentary beds. Geochemical prospecting methods are being studied. In some areas the chemical composition of underground waters is believed indicative of proximity to petroleum accumulations.

A number of logging devices has been developed for use in well bores, or at drilling rigs, which make measurements of functions related to the nature and fluid content of the underlying rocks. The electrical logging device explores the entire bore hole, and records the "self-potential" and "resistivity" of the rocks through which it passes. By studying the curves so obtained, and from experience, one can infer the type of sediments encountered, correlate geologically similar sediments between wells, estimate the percentage of formation filled with water, and thus forecast the intervals through which the drill has passed which may be productive of oil. We shall not mention here the many new minor techniques which have been developed to improve the recording and interpretation of this highly useful exploratory method. Induction logging, i.e., measuring the inductance rather than the resisting of a formation traversed by the bore hole, is a very new and promising method. Natural or induced radioactivity in rocks is measured and recorded by ionization chambers which traverse the well bore as does

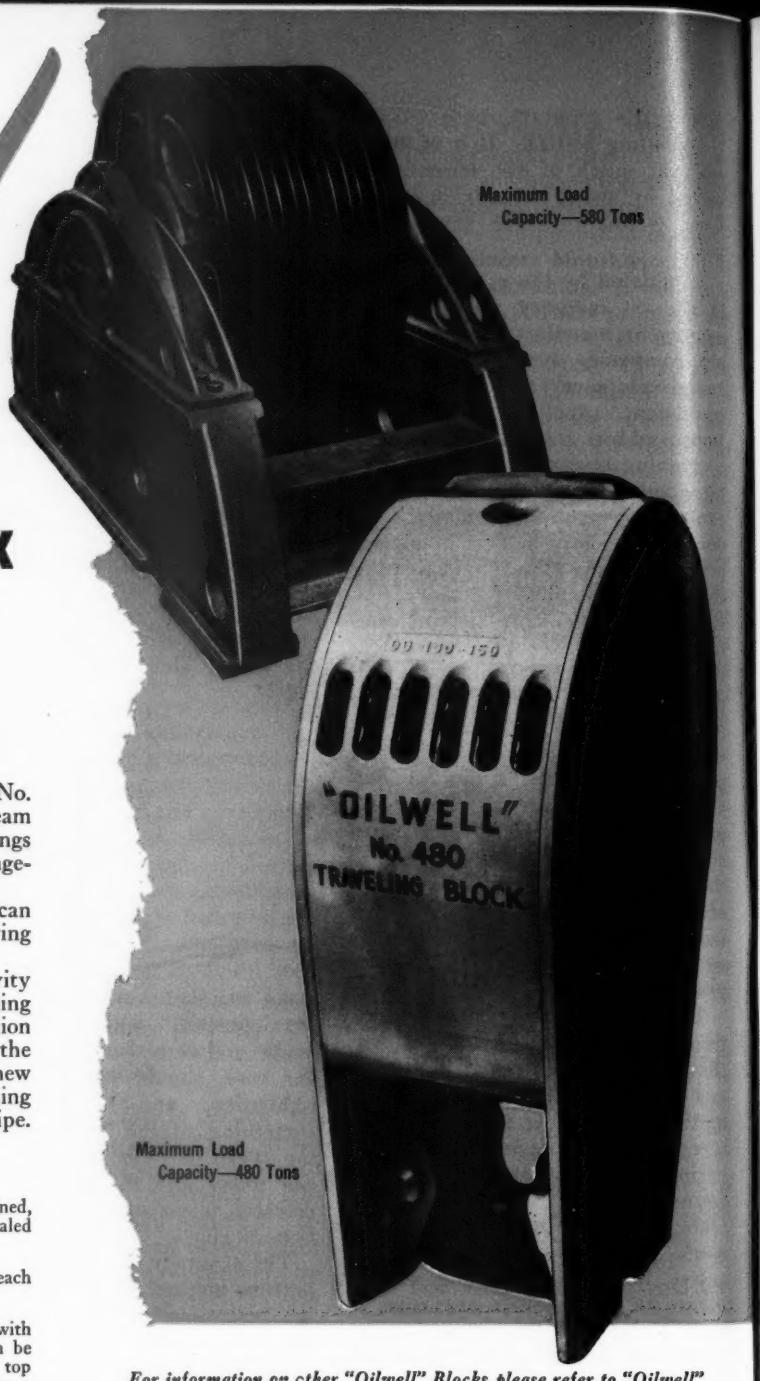
New!

Streamlined Blocks for deep-well drilling

"OILWELL" No. 580 CROWN BLOCK

and its companion

No. 480 TRAVELING BLOCK



THE NEW "Oilwell" No. 580 Crown Block and No. 480 Traveling Block form a safe, dependable team with a favorable ratio of strength to weight. Bearings and sheaves are identical and completely interchangeable.

Due to its narrow design this new Crown Block can be easily installed in one piece which is a time-saving advantage.

The balanced design with low center of gravity keeps the Traveling Block vertical even when running light at high speeds. Safety streamlined construction and free running sheaves make it possible to run the block as fast as the crew can handle the pipe. This new Traveling Block is short, as well as narrow, affording maximum space in any derrick for handling the pipe.

IMPORTANT ADVANTAGES

BEARING TYPE—Both Blocks are equipped with self-contained, dual-roller type bearings having side thrust capacity and sealed grease lubrication.

LUBRICATION—Grease, through individual connections to each bearing of each block.

FEATURES—Traveling Block is narrow, compact, streamlined, with no projections . . . has fully enclosed safety guard and can be strung without removing the guard . . . rubber bumper on top protects sheaves . . . will stand upright on derrick floor without tipping.

SPECIFICATIONS

DESCRIPTION	CROWN BLOCKS	TRAVELING BLOCK
Maximum Load Capacity	580-Tons	480-Tons
Number of Sheaves	7	6
Outside Diameter of Sheaves	50″	50″
Wireline Size	1¼″	1¼″
Centerpin Diameter	12″	12″
Overall Width	4′-2″	2′-5¼″
Overall Length	8′-0″	.....
Overall Height	4′-11″	7′-9¼″
Maximum Diameter Across Guard	....	4′-3¾″
Distance—Centerpin to Top	2′-1″	3′-0¼″

For information on other "Oilwell" Blocks please refer to "Oilwell" Booklet No. 5C-1047. Or inquire at the nearest "Oilwell" Store for complete specifications and detailed information of all Blocks in the "Oilwell" line.

OIL WELL SUPPLY COMPANY

Serving the California Oil Industry Continuously Since 1896

934 North Alameda Street, Los Angeles

AVENAL BAKERSFIELD LONG BEACH TAFT SAN FRANCISCO VENTURA

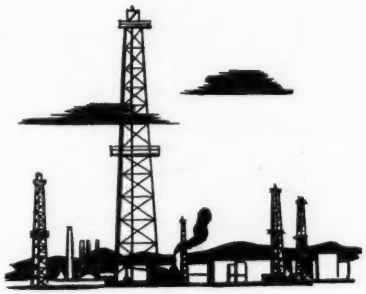
USS "OILWELL"

UNITED STATES STEEL

the electrical logging instrument. By means of such devices, both "neutron" and "gamma-ray" logs can be obtained. Location and intensity of these radiations are related to the nature and fluid content of the sediments. The method offers an additional and useful tool for correlation of rock conditions between wells.

Drilling mud is sampled and analyzed by a recently developed logging method to determine the nature and amount of occluded gas. The "show" of gas is related to the drilling depth to forecast the presence of hydrocarbons. Similarly, the drill cuttings brought to the surface with the drilling mud are sampled and tested for fluorescence under ultraviolet light. The presence and nature of the fluorescence may be related to the proximity to oil.

Many advances have been made in the method of drilling. The newest rotary equipment is "unitized," and the essential elements are in effect prefabricated into compact units which can be made mobile in themselves or conveniently carried on a truck. These developments make for much faster and easier setting up and dismantling of the equipment and for moving it between locations. The driller's job is made easier and more efficient through improved instrumentation. From one position he can now control the speed of his engines, the speed of drill rotation; he can regulate the weight on the drilling bit, the rate of drilling fluid circulation, etc. Where drilling operations are carried out in swamp lands, all of the required equipment—derrick, engines, mud pits, pumps, etc.— is transported on a barge which is floated in a dredged channel to the well location, and settled into position; and, in the matter of a few hours, rather than days, the drill is making a hole in the earth. Coring methods, to obtain samples of the rock being drilled, have been improved by developing new bits, one of which is faced with black diamonds. Core-analysis procedures are continuously being improved to determine more precisely the nature and extent of the pore spaces in the rock and of the fluids contained therein.



Methods are now available whereby cores can be oriented at the surface, so that the direction of dip of subsurface beds from which they originated can be estimated. Drilling muds have been improved for the purposes of minimizing losses into porous formations, resisting deleterious effects of contamination, improving electrical logging results, and reducing overall costs. Plastics are often used in place of cement to seal off or plug formations containing fluids which it is desired to exclude. A new combination perforator and tester is now available by means of which the steps of perforating well casing and sampling the fluids in the exposed sands can be performed in a single operation. This eliminates one withdrawal of equipment from the hole and thereby speeds up drilling operations.

Instruments are available by means of which wells can be surveyed to determine the deviation of the bore hole from vertical. With the aid of these instruments and special drilling tools, wells can now be intentionally deflected and controlled in any direction—thus making drilling under rivers, lakes, and even under the ocean possible from surface locations.

Extensive research is under way to improve still further drilling equipment and techniques. Field trials already have been made of mud-powered turbines which are directly connected to the drilling bit at the bottom end of the drill pipe. Inasmuch as the drill pipe itself does not rotate, the method promises a reduction both in drill-pipe failures and in total horsepower requirements. Field trials also have been made on a drill powered by an electric motor, directly connected to the bit, which is lowered into the hole on an insulated cable. Development work is being continued in an effort to make these devices practical. In addition to research on the drilling method itself, efforts are being made to detect, correct, and prevent loss of circulation of the drilling fluids, and to improve well-completion techniques so that wells of optimum producing capacity will result once the productive oil or gas sand has been exposed.

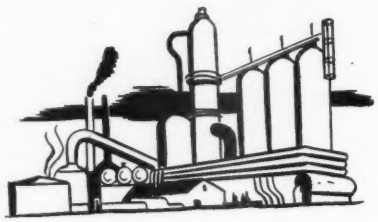
Research dealing with the recovery of oil and gas from underground reservoirs, both in the laboratory and the field, has resulted in an improved understanding of the way in which oil, gas, and water move in underground reservoir rocks. Thus we now appreciate the value of controlling the production ratio of gas to oil, and in some reservoirs of encouraging and controlling the encroachment of edge waters to increase recovery. For example, it is estimated that, as a result of controlled operations, more than a billion more barrels of oil will be produced from the East Texas Field alone than would have been obtained if the field were produced wide open as in the days of the "gushers." We now fully appreciate the value of augmenting the native energy in the reservoir by injecting gas and water under controlled conditions to increase the recovery. In the Bradford Field, so-called "secondary-recovery operations," involving the injection of some air and gas but predominantly water, have resulted in the recovery of more oil from the field than was produced by early depletion methods.

Gas injection for the purpose of controlling the rate of pressure decline, in order to increase recovery and reduce pumping costs, is being practiced in many oil fields. In so-called condensate-type fields, where the oil in the reservoir exists primarily in the vapor phase, the value of injecting a dry gas into the reservoir to push the "wet" gas to output wells, has been demonstrated as an effective method of increasing recovery, and many so-called "cycling" projects are under way, some of which produce, process, and reinject in excess of 100 million cubic feet of gas daily.

In order to plan intelligently for these projects, it is essential that

much basic information be obtained concerning the oil fields involved. Core analysis is essential to determine the percentage of void space in the rock, and to estimate the percentage of oil, gas, and water in those pore spaces. Cores on which such measurements are made are then "restored" to their reservoir-fluid saturations in the laboratory and subjected to flooding tests to determine the quantity of oil that can be recovered by gas or water injection. Instruments have been developed to determine accurately the pressure and temperature existing at the bottom of a well. A device is available to obtain, from the bottom of the hole and under the pressure conditions there, a sample of the oil and gas in the proportions in which they exist in the reservoir. These samples, or similar ones obtained by recombination in proper proportions of oil and gas produced at the surface, are studied in the laboratory to determine the pressure-volume-temperature behavior of the mixture.

The control of naturally encroaching or injected fluids is a difficult operation. Research laboratories have developed methods to determine which wells to produce, and where and how much fluid to inject daily. For example, an electrolytic model has been developed which is dimensionally related to the size and shape of the field to be studied. The flow of electrical current in the model is analogous to the flow of fluids—the voltage corresponding to pressure, and the resistance of the reservoir rock to the flow of fluids. Electrodes are oriented in the model to represent the wells in the field. In one type of these devices the passage of current into electrodes representing injection wells, and out of electrodes representing production wells, results in a movement of ions confined in an agar-agar gel in the model basin. The ions are colored —one color representing the original oil in place, and another color representing the injected fluid. Thus, by photographic means, the areal spread of the injected fluid into the reservoir can be determined. By obtaining in this manner the patterns for several different well locations and injection rates,



the optimum injection program can be chosen.

In order to minimize laborious calculational methods of predicting reservoir-pressure behavior and rate of edge-water encroachment, one industrial laboratory has developed an "electric analyzer," or electronic calculator, which solves these problems automatically.

The foregoing are but a few of the many developments in the relatively new field of "reservoir engineering." By working closely with operating personnel, research people have seen their laboratory findings corroborated by field performance. Inadequacies in evaluation methods for primary pressure control, gas injection, water injection, and secondary-recovery operations are known, and many industry laboratories are concentrating a substantial part of their research effort on improving these methods. Work is being done on all aspects of flow of multi-phase fluids through porous media; on developing tracers for field application to determine the path of injected fluids; on developing selective plugging agents to exclude undesired parts of the "pay zone" in injection and production wells, and thus even out the flooding pattern; and on many other items.

Striking advances have been made in the lifting of the fluids to the surface once they have reached the well bore, and in separating the oil, gas, and water for further handling. New long slow-stroke hydraulically-operated rod pumps have been developed which have been operated successfully at depths below 11,000 ft. Another type of pump is operated down the hole by a hydraulic engine directly connected to the pump, both of which can be circulated out of the hole by the "power oil" without pulling the tubing when repair or replacement is necessary.

The efficiency of gas and oil separation has been improved. The water-oil emulsions found in many wells can now be broken effectively and with increased economy. A meter is being developed which will continuously record the ratio of water to oil in the flowing stream, thus facilitating surface gaging of production.

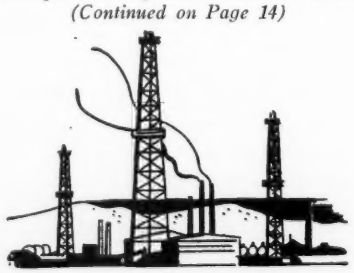
In field processing, absorption cycles have been improved for the more efficient and economical recovery of propane and butane as well as natural gasoline from wellhead gas. These developments grew out of the increased demand for the lighter hydrocarbons for chemical and for domestic use, particularly in rural areas of the country. To contribute to economical gas-injection and condensate-recovery operations, absorption plants are now being designed to operate at pressures in the range of 1,500 psi to 2,000 psi, in contrast to the upper limit of 500 psi to 600 psi which prevailed 10 to 15 years ago.

The accomplishments of production research to which we have called attention in the preceding paragraphs represent predominantly the end products of applied research. The story of fundamental research studies and their results is usually less spectacular, particularly to the layman, than the final steps leading to practical applications. With this in mind, we have stressed such practical applications in an effort to demonstrate effectively the benefits resulting from production research.

Outlook for the Future

We have attempted: 1, to demonstrate something of the need for research, both fundamental and applied, in the production of oil; 2, to indicate the scope of oil-company efforts individually and cooperatively, as well as the efforts of others to meet these research needs; and, 3, to indicate by a number of examples the present status of ac-

(Continued on Page 14)



Credits and Corporate Security

David W. Harris
President
Universal Oil Products Co.

It should be emphasized that corporation credit management has assumed a significant role in the development of American business. It has protected corporations against severe losses, and at the same time it has contributed to the net profit results through the judicious investment of corporate working funds. Therefore, credit management should be recognized as an essential and constructive force in the financial success of all corporations.

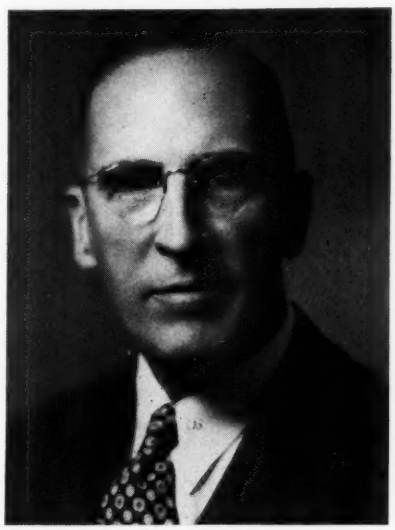
Although this discussion is primarily devoted to credits on a wholesale scale, we must not fail to consider the problems of retail credit extension. In the November third issue of a widely read oil publication the Editor goes rather aggressively into the subject of the distribution of retail credit cards. This editorial points out that the indiscriminate issuance of credit cards is a costly practice, and suggests the credit men should be positive that a real need exists before issuing a card for credit purchases.

While a matter of a company policy is involved in this subject, it would seem logical from a purely credit standpoint that we sift out those credit cards holders whose average purchases are too insignificant to justify the time and expense required to keep them on the books as credit customers.

When financial trouble becomes generally known it is too late for the sorrowing credit man to push his collections. A careful continuing advance analysis of each customer's potential ability to meet his financial obligations requires many hours of the credit man's time. Therefore, the credit executive, to justify his analysis should first be satisfied that the customer's account is of sufficent importance to warrant the time consumed.

Economic Trends Must Be Studied

Never in our nation's history has it been more necessary for those responsible for the extension of credits to be keenly alert to the fundamental changes in the economy, and to promptly analyze the effects upon credits extended. And never has it been so important for credit men to fully understand the basic factors that influence the changes rapidly occurring in the corporate financial scene.



David W. Harris

Corporate profits have steadily risen over a period of the past several years. However, the purchasing power of the dollar has at the same time considerably decreased. Thus when we subject the profit dollar to careful analysis, we find that there isn't as much profit as popularly conceded and that profit statements do not of themselves reflect the complete picture.

As an example, a competent authority giving an analysis of corporate balance sheets for the first six months of 1948 reveals that even though sizeable sums are being set aside in undistributed profits, the percentage of income going into reserves is only slightly larger than in prewar years. Although the corporate net income during this period was in excess of thirty billion dollars and over three times the net income amount of any of the best prewar years, corporate taxes have made heavy inroads on net profits.

The summary further shows that federal and state taxes, even when taking postwar reductions into consideration, consumed 39 cents out of every dollar of corporate net income as compared to 14 cents during the 1926 to 1929 period, which were the best prewar years. Thus, the dollars set aside in reserves during the first half of the current year represent only 37 per cent of total profit taxes, and those are dollars that will buy much less than would the 30 per cent which corporations set aside in the prewar period.

Recent Trends Indicate Caution

Spiralling costs have created an unusually high break-even level for all corporations . Factors likely to cause changes in future sales volume are therefore of maximum interest. Those companies whose operations include a large proportion of labor charges must come in for special credit scrutiny. The effect of labor costs upon expected profits of these companies may loom large.

Already some businesses have granted wage increases. Since the election, labor leaders in a number of industries are beginning to test the public mind for possible further increases. On the other side of the picture, in some lines, business has slowed. Recently reduced costs of commodities and other reclining factors may somewhat temper labor's demands for a reasonable period of time. If wages should be increased, it is safe to assume that profits will have to absorb some part of such increases. Either direction will materially affect profits, and we again have emphasis placed upon the need for constant vigilance upon the part of already overworked credit executives in assuring that credits be soundly granted to continue the guarantee of future security of the enterprise. An alert knowledge of these fundamental principles of business has enabled credit men to contribute to corporate security through a continuing improvement of credit

methods in preventing capital losses and maintaining a sound economy based upon a fair profit return on the capital dollar.

Credit and Sales Dept. Relationship Vital

In stressing the importance of good credit management to the success of every corporation, let us not overlook the importance of good relationship between credit and sales departments, and its effect upon corporate sales curve. A company's front line of contact is its sales department, and policies affecting the relationship of credits and sales should be carefully formulated so that desirable accounts will not be jeopardized. Experience indicates that credit men must maintain a delicate balance between the desire of sales departments to please most customers and the necessity of minimizing the risk of bad debt losses. In so doing, there is need for an alert and down-to-earth understanding of reasonable expectations ahead for companies requesting credit.

In this period of high cost-of-doing-business, corporations are depending upon large volume sales to help maintain present earning peaks. A constructive approach toward determining ways of investing capital funds in well secured credits is essential to that accomplishment. While caution should always be exercised, flexibility in credit methods seems to be one important step toward keeping the sales curve up and developing closer cooperation with sales departments.

Rather than be ultra conservative, it would seem advantageous to look deeply into each individual situation for the purpose of fully exploring those channels through which credit might be extended. Even though the picture might look unfavorable at first, there is always a possibility that it will brighten as additional facts are uncovered.

Generally speaking, sales forces are channeled in one direction . . . the shortest possible path to increased sales. Credits often loom as insurmountable objects in that path. Obviously, we can expect variances of opinions on matters relating to credit extension; however, it is reasonable to believe that such differences can be successfully adjusted if sales departments have a more thorough comprehension of credit problems.

There is nothing mysterious about the refusal of credit. Nevertheless, sales departments sometimes feel that credit men apply the crystal ball technique to their methods of operation. While the decisions are based entirely upon fundamental facts revealed through proper investigation, the salesman in the field is too far removed from credit operations to fully understand the reasons for such decisions, particularly when they affect his individual sales volume.

The salesman does not have a monopoly on good sales psychology. The credit man must use the same psychology in educating the sales department to understand credit fundamentals. This is not easy to do. It requires perseverance and patience. It will take time, and you will find that a lot of energy must be used in this direction.

Telling sales departments how credits function, explaining techniques and methods of operation, emphasizing the important contribution of credits to corporate security, all give the sales department a more complete understanding of the importance of proper credit analysis in its relation to the economic stability of corporations.

The salesman has no exclusive understanding of the problem of customer relations. The credit department is keenly interested in the public relations policy of its company, and reflects this in contacts with customers with respect to credit matters. This constructive approach avoids the loss of potentially profitable business and is of extreme long range value in the proper investment of the corporation's capital in sound credits.

In conclusion, may I emphasize that credit men, responsible as they are for the investment of a substantial amount of corporate capital, are continuously contributing to a maximum of earnings with the minimum of losses. Through careful and intelligent analyses, maximum returns are available, and the largest possible insurance to the security of the individual corporation reflects favorably upon the national economy.

The positions with which credit men are entrusted demand a large degree of administrative ability, and upon their day-to-day decisions rests a substantial proportion of the profit picture of oil companies. The understanding and knowledge of the rapidly changing situation and its probable effect upon the future, permit the discharge of duties with confidence, and in a manner which results in the highest order of contribution to the security of the entire corporate structure.

The Role of Research in Production of Oil

(Continued from Page 12)

complishments of the laboratories which are bringing their forces to bear on the many problems.

The research that has been done has served the industry well. In order to be of optimum usefulness, however, research should be several years ahead of the needs of the operating personnel in any industry. Unfortunately, in the production end of the oil business, it is not. The operating groups have encountered so many problems requiring immediate answers, relatively speaking, that the preponderance of the overall effort has been applied research, with too little attention to fundamental research. Accordingly, some of the answers that have been obtained are empirical, makeshift, or incomplete. Much of the fundamental knowledge required for this work that should have been obtained 10 years ago is lacking. This is an unfortunate situation.

We should have a much greater reservoir of fundamental knowledge if applied research and development are to proceed in an optimum manner. A concerted effort to supply more of this fundamental knowledge should be made by the oil companies individually or through cooperative means such as the American Petroleum Institute.

We have every confidence that, with an increased effort in fundamental research and a continued effort in applied research, our national supply of crude oil will continue at a high level for many years to come.

Kern County OIL NEWS

"ON AN EVEN KEEL" was the terminology used by oil producers last fortnight as production continued to be up and new wells brought new discoveries in Kern and its environs of oil.

SALT CREEK CARNAROS reported under unit plan program developing by Independent Exploration. Back of the Russell ranch in Cuyama Kernoilwigs could report plans amounting to a third of a million in costs for tank farms and repression unit in connection with unitization.

OTHER TALK was over the Central Valley Oil Scout Association Xmas party at the El Tejon. CVOS's used to be San Joaquin Valley Scouts, but their members now come from across the hills from other valley areas.

RICHFIELD'S JIM O'FLYNN has been transferred to the Coast and GEORGE TARR has taken his place here.

SADDENED NOTE came from DWIGHT BOVEY of Western Oilfields Supply Company, when it was reported that his father passed away at Ames, Iowa. Our sympathy to him and his family. We shall never be able to figure out why so much sadness often comes at the Yuletide season.

MISSING FROM THIS COLUMN has been our old friend OWEN JOHNSON whose many friends have asked us what became of him. So we mention him and report that the valve business is just as good as ever.

FRIEND HERM WEDDLE called us up the other day and reported that the geological department and many other friends of Rupert Wiedemeyer who was killed in an airplane accident in Holland two months ago are still unable to appreciate his passing. As manager of the American Overseas Company he had taken so many trips and was used to being missed, but according to Herm his return seems lengthened instead of impossible. Nice tribute Herm.

FROM FOREIGN LANDS have come Messieurs BURGER and DE SCHEVILLY of Morroco and Algiers . . . purpose . . . calls and visits . . . Kern County production areas.

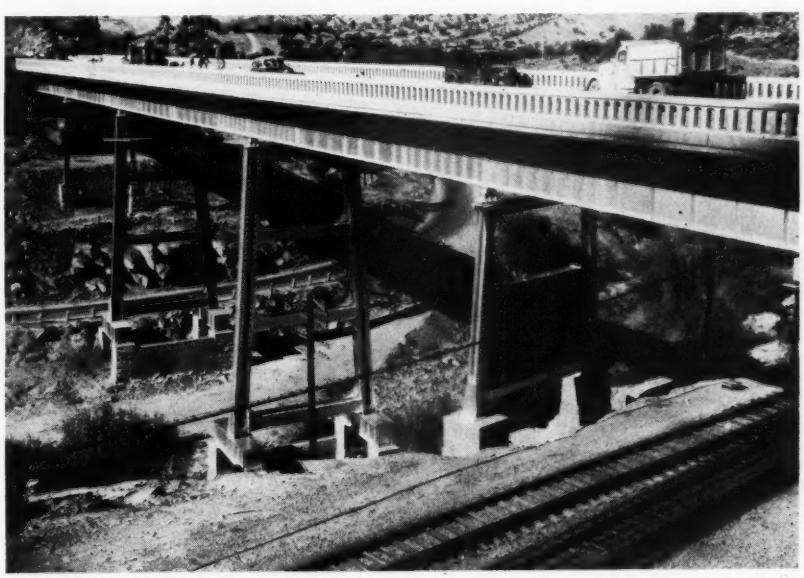
SEEN FROM BLUE PRINTS and warehouse activities are considerable equipment for Coalinga areas being readied for oil wells.

PAT PATTERSON OF SHELL has been named on a special committee for the Central Valley Oil Scouts to be responsible for the Xmas lubrication.

DAILY BARREL PRODUCTION latest figures look something like this to Kernoilwigs and they are receiving holiday greetings to the tune of 916,000 B/D and that is a new high it was reported.

CONTINUING TO MAKE NEWS is the Hancock well over at the prolific pool by Richfield. Hancock slanted into new pay zones this month. First other than Richfield in the 30 well area. Thirteen miles west of here is more news.

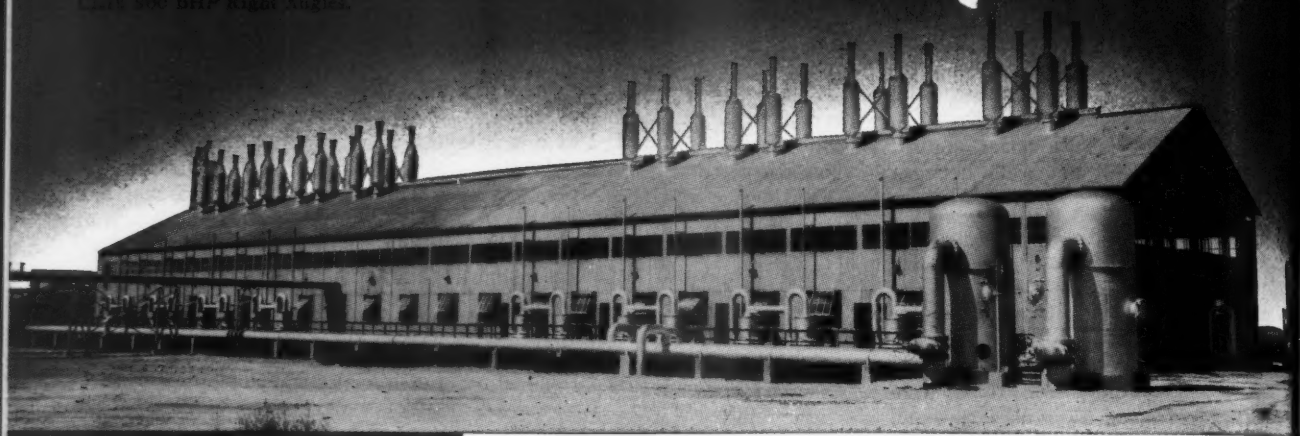
CHARLEY MANLEY from OILFIELDS CONSTRUCTION COMPANY, who is probably getting in line for Rose Bowl ducats for his annual New Years classic all of its own, will have the backing of the local city entry float at the parade. This will enhance his visit to Pasadena. HUMPTY DUMPTY is the childhood memories theme's gift from Bakersfield. Harry West's Clydesdales will be the king's horses and the king's men will be young ladies from East Bakersfield High School all trying to put HUMPTY DUMPTY together again. Charley hopes that Humpty's great fall will have nothing to do with any similar fall in



TEHACHAPI BRIDGE AT KEENE across Caliente Creek and "SP" R.R. tracks is connecting steel span on U. S. 466 which opened the new improvement features of the highway. This route permits Kern County oil products and supplies to reach new markets into almost inaccessible areas. Kern civic organizations and individuals aided the oil industry and its allied representatives in proving up the need for the highway.

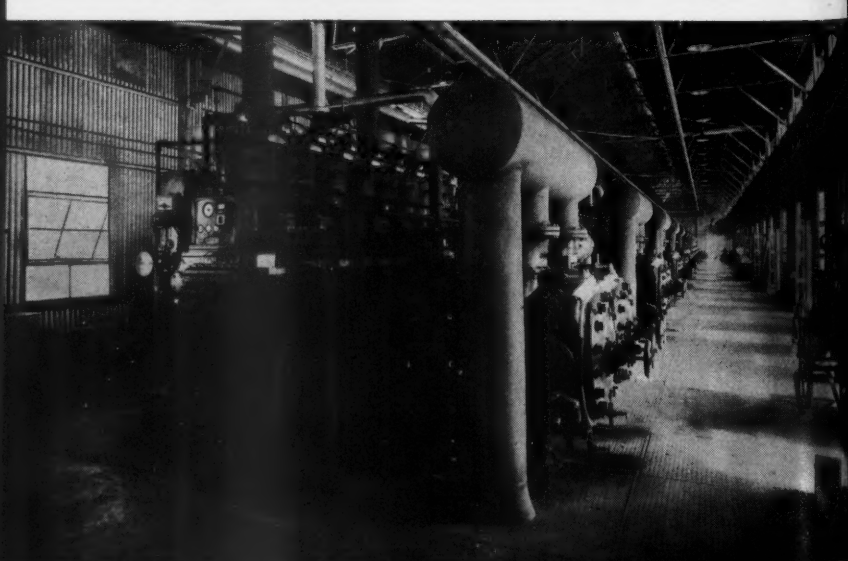
Shell *Repeats* W

Original compressor installation at Wesson No. 2 Plant consisted of eight Clark 800 BHP Right Angles.



Wesson No. 2 Plant was expanded and eight more Clark Compressors were added.

This photo shows one of the two similar installations of Clark Right Angles at Wesson No. 2 Plant.



Seven Clark units are visible in this interior view of the TXL Plant.

with Clark Compressors

New TXL and WASSON No. 2

Gasoline Absorption Plants

The Shell Oil Company's new TXL plant in Ector County, Texas, duplicates the operating conditions of Shell's Wasson No. 1 and No. 2 gasoline absorption plants in Yoakum County, Texas.

In these modern plants, 34,400 brake horsepower of Clark Right Angle Gas Engine Driven Compressors take the gas in from the field at pressures between atmosphere and 7 psig and compress it in two stages to a final discharge pressure of 205 psig. At this final pressure, the hydrocarbon gas is processed in highly efficient absorber units where the gasoline is extracted.

CLARK BROS. CO., INC. • OLEAN, NEW YORK

BIRMINGHAM, ALA. • BOSTON • CHICAGO • DETROIT • HOUSTON • LOS ANGELES
NEW YORK • SALT LAKE CITY • SAN FRANCISCO • TULSA • WASHINGTON
LONDON • PARIS • BUCHAREST, RUMANIA • CARACAS, VENEZUELA

Shell's new TXL Plant in Ector County, Texas, showing compressor house in foreground containing eleven 800 BHP Right Angl

CLARK

ONE OF THE DRESSER INDUSTRIES

SETS THE PACE IN COMPRESSOR PROGRESS

any oilfield construction now showing increasing returns over previous footings.

POTATO SPUD BOWL had its official football game under auspices of the Kern Shrine Club and the copyrighted protective name by Kern's big C of C was released for full publicity benefits. Now the OILWIGS want a PETROLEUM OIL BOWL . . . but there is already an oil bowl. Why not call it "SPUDOIL" Bowl said Cliff Gray the clothes horse trainer at the clothing story by the same name.

SOUTHERN CALIFORNIA GAS COMPANY's Z. H. (Avocado) BISSELL reports that he is still picking avocados off his 15 foot tree 6 years old. He has been in search of an Avocado Mayo Brothers since he thinks he ought to have a hundred pounds instead of only forty pieces. If all the avocations (not avocado) of oilfolks including hobbies were put end to end it would make a fantastic parade of human beings from Taft to Edison one foot apart.

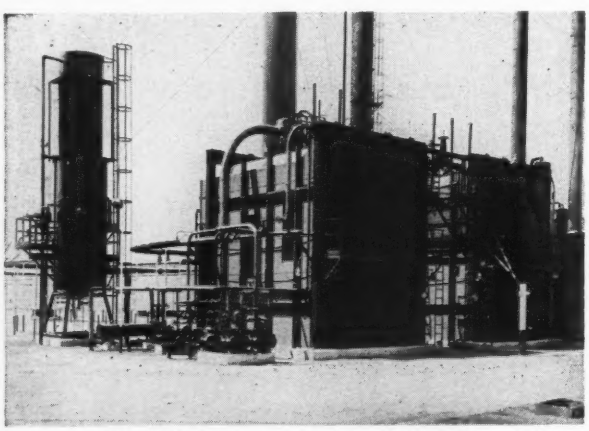
WE JUST RETURNED FROM seeing our "kinfolk" in Okie City where the oilwells do their shopping right down town and pay their taxes right at the State Treasurer's office at the capitol building. Lot of Kernoilwigs got their start in Oklahoma, a great state . . . and a lot of Oklahomans got their start in Kern too . . . we know 'cause we were there and they said so. Only thing we did not like was the lack of a ceiling on Scotch and the difficulty experienced watching our friends almost suffocate for the lack of a needed stimulate which seemed to help the water.

IN KANSAS CITY we cancelled our reservations on TWA's Thanksgiving trip and set airsail to Omaha for a comparison of storage space . . . not for oil but for cattle. The hoary frost which covered the field not far from Aksarben stockpens could scarcely hold up humans say nothing about inhuman planes that landed and took off with the greatest of ease. At Denver excitement was high over the "mountain of shale" and new found oil in bold quantities. The UAL's DC6 brought us back but turbulent currents with a depressurized cabin shook us like fish shakes water from a fishermans strike. Only planes were flying . . . trains and autos were grounded.

MOST OF THE 4H and FFA Western Livestock Exhibitors from Kern County walked away with the grand purple ribbons. Many of their dads have an oil lease in the bank vault with a small royalty included for Xmas.

TED WALTIMIRE who likes a good steak now and then and has been buying a lot lately on account of "BIG" (Business Is Good) has recommended METTLER GRAIN FED BEEF from Shafter. Los Angeles and Reno discovered it before Kern did which Ted thinks really had a beef a coming.

FRANK HORNKOHL also avenue along PETROLEUM BUILDING (TRUXTUN to you) has not been in the news lately on account of rehearsing for the next Philharmonic concert . . . and figuring up



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his taxes from expansion into new fields in a big new laboratory. Oldsters call him the Cultural Mud smeller and Frank plays them the Missouri waltz.

NEVER SAW SO MANY people looking 38, acting 38 and feeling 49. All over this country the ages are the same and insurance companies are now worried over the longevity instead of the mortality rate. Even in Maine the answer is the same.

MRS CHARLOTTE THOMAS who has lived in this area since the passing of her brother Joseph McDonald, a well known Kernoil pioneer, has been visiting in San Francisco. In her beautiful garden west of our city here is a gorgeous Holly tree . . . a rare and lovely specimen for San Joaquinians.

YEAR'S END INVENTORY for 1948 will include a little more new production tangible than we or even you may have guesstimated. As we write we are thinking of well known oil producers and dispensers of gasoline who have since our last copy firmed up new production sources.

EMPLOYMENT TROUBLES between "ee" and "er" are not as big as they were since little problems have been made out of big ones. Things really look better in Kern and the people have come to realize that one of any community's best assets in promulgating prosperity is the resource of labor management tranquility or harmony. Nothing succeeds like a successful hemogenious "status quo" of working arrangement or workable contract between the two important factors of commerce.

EDITORS CLAIM that December is a less readible time than other eleven months on account of the Yuletide . . . columnists claim that more time is available for reading everything . . . One cannot win it seems.

GENE VALLAT of Ohio and Dave Scott of Texaco with Ted Barnett et al were seen committeeing near the "oilzone" one day last month. Caucusing for organization leadership and nomination committee work is the order of the day around the holidays if year end inventories are out of the way or soon to be in the way, as you like it.

MAYFAIR HOTEL (Kern County's branch countyseat) is still betting on Oregon. The Farrington, Thom and Philbin Company are readying the Wedgeroom for New Years, replacing souvenirs, bracing the chandeliers and otherwise polishing up the new look. Even the chef is buying a new grapefruit squeezer so that California can be added along with Florida as having joined the union wherein all other states serve fresh juice. Back home we never had cream for our coffee out on the farm because we sold it . . . there was money in it . . . so we used canned or condensed cow.

OVER IN TAFT the CNGA met . . . in Standard Oil Company's excellent 1-C Clubhouse and heard C. L. BLOHM and ED McCARTNEY, process department of Fluor Corporation give the story on "PURIFICATION AND DEHYDRATION OF GASES" according to RUSS FURLONG, chairman and L. P. FOOTE the secretariat. Moving pictures and refreshments rounded out the program.

OIL INDUSTRY INFORMATION COMMITTEE is interested in assisting the California and Kern County committees now organizing an official state exhibit at Sacramento . . . A traveling portable display "gismo" is on the mental drafting board and a permanent exhibit for Kern is being talked over.

OUT IN FRONT of the Municipal Auditorium there is a bronze lid over a test hole for oil in downtown Oklahoma City. A steel tube is cemented in the 1500 foot casing at the top containing dedicatory and other famous documents of the non negotiable type.

FRANK D. ORLOFF has opened an advertising agency in the El Tejon known as the FRAND advertising. And speaking of advertising H. P. O'LEARY special public relations representative . . . for Santa Fe System lines dropped down to hang up the perennial beautifully designed calendar.

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CREATES ITS OWN WELCOME" that is the Biltmore slogan in Oklahoma City.

IN CASE WE DIDN'T mention it before the oil industry has been the mother of invention more than once in Kern County decades. We told you about talking pictures, television, petroleum switches, couplings, hoists, and JAKE VANDERLEI the Mayor blacksmith of Bakersfield . . . but we forgot to mention that KURTH BATTERY COMPANY has made the most incomparable battery for double duty oilfield work, transportation or engine.

WE RAN ACROSS something new to us at Ardmore . . . the SCLEROGRAPH for testing tublar goods. Probably most old oilfields have invented gadgets peculiar to their needs.

FIFTH CLASS in oilwell drilling mud control has begun with GUY GARRARD's Bakersfield Evening High School. WARD KLINK of "GP" will instruct. Frank Jones secretary of AAOWDC assisted in arrangements. Monday, Tuesday, Wednesday and Thursday are scheduled for first classes, followed by similar schedules throughout the month. Hours are from 7 to 10 pm each time.

MARY INGRAHAM from Oakland has been appointed on the staff of the Conservation Committee at the Bakersfield facility according to Barney Barnard the local manager. "Welcome to our county," is in order.

B. W. McCUNE & Associates, Gene Reid Exploration Company now have six wells producing with a duster and one-a-coring to consider. They have proved up the NE quarter of the SW quarter Sec 18-29-29 where three wells from 1200 feet are producing with one being drilled. The Kern Bluffs extension is avoiding the fault which was discovered with the duster. Oceanic is going south with its activity. Former three wells now still producing were on SE quarter of the SW quarter Sec. 12-29-28. Mac is our good neighbor and reported this for the benefit of many who

STANLEY BECK himself peering out the window of his new Paleontology building from his laboratory wherein is located the oil industry's newest professional expansion.

are still trying to locate the properties and take a "looksee."

SHRINE KERN COUNTY POTATO BOWL had its earthquake too. Santa Barbara 46 Willamett 7. Cecil Jones gave the bowl name away and received too.

BIG OIL COMPANY CHECKS made payable to J. Perry Bright Kern County Tax collector are arriving like bundles of mail and are as welcome as Xmas. Oilwigs are concerned over the new tax gulping antics of new legislation imposed upon California as a whole next year. Said one representative with a check in his hand for a million dollars, "like a camel racing from Taft to Bakersfield he's going to get tired out someday and stop at Panama for a drink."

IN DENVER AT THE CIVIC center soap boxes are now provided speakers of all types including the worst. No longer is a license required to speak out of doors, according to our Bureau of Mines and Oil guest and interviewer.

HARRY J. CROSSAN vice president of Kern County Bank is in Fresno at this writing attending the California Bankers Association, Group Two held at Sequoia Club. Two hundred bankers of San Joaquin Valley (Bakersfield to Turlock) have made reservations. E. J. Mahoney is chairman, manager Security First National Bank here.

STOCKDALE'S PRESIDENT Charley Lake has announced seasons activities for the remaining calendar year which includes a ladies Christmas party for December and matched play by men followed by a smoker. Big new year's ball also highlights the bulletin . . . board.

SKI CLUB BAKERSFIELD which has just held its annual election lists an imposing membership . . . Strangely enough oilmen lend a likewise imposing portion of the membership. In Taft the Westside Skiers are almost without exception oilers, including their excellent leader and sponsor Jack Surfluh. Frank Celle advertising official heads up the Bakersfield unit.

OILMEN who fly the most will be happy to learn that Cecil Meadows Kern Airport manager and county counsel Norbert Baumgarten have left for Washington DC to intervene before the CAB hearing in behalf of a feeder line for the county. This will create more business for the existing airlines transcontinental service it is reported. It takes almost twice as long to fly from Kern County to Los Angeles or San Francisco as it does to fly from those points to Louisiana, Texas and Oklahoma or Colorado areas.

TO ACQUIRE STATE AID in improving 102 miles of state highway through Kern, Tulare, Kings and Fresno counties a group from these counties on highway matters will attend the State Highway Commission in Sacramento this month. Public Works Director from Kern County attending will be C. A. James.

RAIN CAME TO KERN COUNTY this month but the fog as yet has not embraced Kern Valley . . . only the falling leaves and a little snow in the mountains became of sudden interest after the blue skies again appeared.

SPEAKING OF LEAVES . . . Doug Fowler formerly of Standard Oil . . . chemical engineering department . . . now building up the gypsum business for the farmers who must use oil products in another operation . . . advised us of his intention as an inventor of some experience with gadgets . . . to invent a leaf chopper. It will mow as it rakes, as it chops, as it sows to refertilize the ground.

PENN'S "SYLVANIA" just outside Philadelphia where vericolored autumn leaves are gathered for decorative purposes will not be in the market for Doug's new "leaf chawer." While there recently the bell boys and maids organized a hike at dawn to gather 2000 leaves for the Kern County grapes that decorated the Ben Franklin Hotel dining tables. Incidently the oil companies in Pa. have a rather unique souvenir which is easier to handle at conventions than grapes and leaves. INVENTORS ATTENTION.

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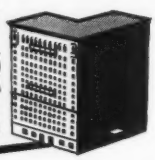

LET US KNOW AS EARLY AS POSSIBLE WHEN TO EXPECT YOU . . . WE'LL HAVE THE ACCOMMODATIONS YOU WANT WHEN YOU ARRIVE.

THIRTY YEARS AGO, according to JOHN J. WILT retired official from Standard Oil Pipeline Division, he was elected President of the Bakersfield Civic Commercial Club . . . now the Chamber of Commerce of Greater Bakersfield.

JOHN J. WILT was recently honored by a testimonial dinner and when Governor Warren was here in October he presented Wilt with a plaque in honor of his outstanding civic leadership for many years including the World War II Bond chairmanship for the county which was an outstanding record in the state.

HORSES HEADS at various points throughout the county are being considered for Xmas decorating, according to some members of the Junior Chamber of Commerce. Oil companies are cooperating it is reported. The modern oil pumping units make excellent animation for such display purposes. With Kern County having almost half of new California wells this year some spectacle from the air could be created with neon decorations.

FIFTY YEARS AGO according to local press reviews, windstorms toppled oil derricks and sent tanks to the ground and oil flowed through the streets.

SCHLUMBERGER SURNCO OIL COMPANY was in the news this month when Clifford O. Schafer, senior engineer for the firm arrived from Venezuela with his wife, the former Miss Marsili whose father is a well known dental surgeon. They spent Thanksgiving here and journeyed to San Francisco. They will return after the holidays to Lake Maracaibo country in western Venezuela where they had lived for fifteen months before their recent visit began last fortnight. Mr. and Mrs. John Drum and the Fred Deweys were also friends of the young couple at Shell camp.

BAD NEWS FOR OILWIG PIGEON hunters comes from the Churchupate Ranger above Frazier Mountain Park who reports a lack of food has caused the birds to desert the area. Lack of pinion nuts is the reason.

COUNCILMAN Alfred Siemon, former mayor, also attorney and oil man has been authorized to attend the American Municipal Conference in "DC."

FOR JACK ANDERSON and Betty Dawson, the wedding bells rang. Jack hails from Bakersfield, Betty from Taft. They now live at Taft and both are employed by Standard Oil Company.

BILL PRICE of the Pacific Drilling Company is in Taft Hospital with an injured hand.

HALF A CENTURY AGO opposition to the "SP" constructing a spur track into Bakersfield was predicted by W. S. Tevis of the Land Company. Today many spurs by two great railroads carry oil and crops into and out of the county. Time changes while "marching on."

WEDDING BELLS TOLLED for pretty Miss Beverly Jamison and handsome Harry Carrick, according to our operator over at the General Petroleum office, where Harry is a resident engineer. Mrs. Carrick is a talented young artist and well known in business as well as cultural circles.

ONE OF THE SADDEST pieces of news coming out of the month's daily record of Kern County Oil News was the sudden passing of ROOSEVELT RENE POLLOK, young engineer for the Richfield Oil Company who had a family of three, a great navy air corps record in the Aleutians, a top athletic score from his high school and college, was 1947 president of his local alumnae. He was graduated from Stanford Mechanical Engineering college at Palo Alto.

MORE SPEED COPS for Kern has been assured by the Highway Patrol. More money or less for Judge Anderson's court at Maricopa, the judge is unable to judge at this writing. Presently in Tennessee after being snowed out in Oklahoma City, the good judge is not expected back until few weeks hence.

YOUNG POLLOK . . . was stricken in Pennsylvania and flown home from his business mission. His mother is Mrs. Agnes G. Pollok, secretary to the Kern County Board of Supervisors.

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Field Development

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Los Angeles Basin

Newhall Hot Spot Drilling Planned

R. W. Sherman, who recently chalked up a sensational discovery in the Newhall area, has staked location for Newhall Comm. No. 2-1 on Sec. 2-3n-16w. Drill site falls 660 ft. southeast of the No. 3-1 discovery, which at present is shut in awaiting completion of storage facilities. Shut in pressures on both the casing and tubing were reported 1450 pounds. The scramble for available ground in the area is reported bringing as much as $5000 an acre along with a 25 per cent royalty. Universal Consolidated has leased 50 acres several hundred feet west of the Sherman oil finder. The 65-acre estate of Western motion picture star, Bill Hart is a short distance southeast of the discovery. Mr. Hart, who died a year ago, willed the property to the state of California for establishment of a public park. Provisions of the will, however, are now the subject of a court contest. Property in the area is said to have once been owned by Moran and Mack, "The Two Black Crows" of the entertainment world. Grace Oil Company of Long Beach, meantime, has staked location for a drilling job on Lot 12 in Tract 1059, an offset to the Sherman producer on Sec. 2-3n-16w.

Mint Canyon Wildcat Works

A fishing job for drill and collar and bit is the present operational move of S.D.M. Oil Company's Orvel No. 1 wildcat on Sec. 1-4n-15w in the Mint Canyon area of Los Angeles County.

Santa Fe Springs Adds New Interest

Milton L. Kane of the Morris Estates Company of San Francisco has announced the acquisition of leases in the East Santa Fe Springs area on the advice of Ralph Arnold, geologist. Kane made known that a block of 360 to 600 acres has been mapped out by the geologist. The area involved is bounded by Anaheim-Telegraph road on the southwest, Colima road on the southeast, Whittier boulevard on the northeast, and Santa Fe Springs road on the northwest. Kane has called attention to the fact that holes have been drilled on all sides of the area, but never in the immediate vicinity. He is reported considering the forming of a syndicate of independent operators and others interested in oil to drill a test well at Mills and Hawes roads.

Montebello Try Produces

Rothschild Oil Company's Wheeler No. 5 on Sec. 2-2s-12w at West Montebello has been completed at 2797 feet for a yield estimated at 30 barrels of 18 gravity oil daily. Standard of California also has finished a well at West Montebello. It is Baldwin No. 133 on Sec. 1-2s-12w, which came in from 2870 ft. for 64 barrels daily. No. 134 on the

Maintenance crew for Standard Oil Co. in the Inglewood Field. Left to right: W. H. Watts, pumper; H. A. Murray, roustabout; D. E. Wilder, foreman; W. W. Clark, roustabout; G. D. Ashdown, gauger.

section is drilling at 2540 ft. Electric log was run to 2550 ft.

Puente Try Starts Work

Richfield Oil is starting Vanderhoof No. 1, a wildcat test in the Puente area of Los Angeles County, 180 ft. south and 1100 ft. east from the northwest corner of Sec. 10-2s-10w.

Placerita Canyon Development Area

Placerita Canyon in western Los Angeles County remains a center of shallow oil development. The area is less than two miles north of the old Elsmere field. B. R. Breckenridge has staked location for No. 1 on Sec. 36-4n-16w. Atomic Oil Company's Sir Keigan No. 1 on the section is standing with casing cemented at 1160 ft. Total depth is 1503 ft. Crawford & Hiles' Newhall No. 3 on the section has cemented surface pipe at 967 ft. Aqueduct No. 1 and No. 2 on Sec. 6-3n-15w are preparing to spud. Indian Oil Company is repairing compressor in its Wanda Kraft No. 4 on Sec. 31. The well is bottomed at 695 ft. Placerita No. 2 is a location on the section. M. & C. Oil Company was last reported standing with casing cemented on present bottom at 1115 ft. Standard of California's Placerita No. 5 on Sec. 6-3n-15w is grading ground. No. 6 is a location on the section. Field mapping by the California Division of Mines indicated the Placerita Canyon structure to be a narrow east-west anticline plunging westward with no apparent closure to the east.

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San Bernardino Wildcats Drill

Cajon Oil Company's Ray No. 2 wildcat on Sec. 36-3n-6w in the Cajon area of San Bernardino County is making hole on down below 1800 ft. Grayco Oil's Grayco No. 2 on Sec. 13-3s-8w in the Chino Hills area is drilling near 3200 ft. Oil sand was evidently encountered at 3060 ft. Hancock Oil's Abacherli No. 1-A test on Sec. 12-3s-18w suspended drilling at 2628 ft.

Castaic Try Digs

Humble Oil & Refining and British-American Oil Producing have carried their Wayside Honor Farm No. 1 on Sec. 1-4n-17w in the Castaic area to 4850 ft. and are drilling ahead.

Antelope Valley Wildcat Inactive

Standing idle at a depth approximating 1500 ft. is Orlando Oil Company's Orlando No. 1 wildcat on Sec. 32-5n-10w in the Antelope Valley area, Los Angeles County.

Newhall Try Pumps

M. G. N. Oil Company's Shephard No. 5 on Sec. 1-3n-16w in the Newhall area apparently was finished pumping all fresh water from a plugged depth of 1130 ft. Original bottom is 1225 ft. Warren Deuel and Dr. R. E. Cowley's D. & C. No. 1 on Sec. 36-4n-16w is temporarily idle at 2300 ft. plus.

San Joaquin Valley

Gosford Wildcat Proves Interesting

A focal point of development interest in San Joaquin Valley is Hancock Oil's KCL No. 85-23 wildcat on Sec. 23-30s-26e in the Gosford sector near the Ten Section field. Drilling has reached a depth below 8500 ft. and based on showings encountered to date, field men would not be surprised if a new oil strike is consummated at this location.

Guijarral Hills Adds Big Producer

Standard of California has completed its No. 35-7 on Sec. 35-20s-16e, a northeasterly offset to Barnsdall Oil's discovery well at Guijarral Hills, flowing at the rate of 1620 barrels daily from a total depth of 8760 ft. The company's No. 35-20s-16e on the section is rigging up. Robert S. Lytle, Operator, continues to drill ahead at 8588 ft. with No. 68-34F on Sec. 34-20s-16e. One mile south of the discovery well, Universal Consolidated has abandoned its Orr No. 1 on Sec. 2-21s-16e. Leda sand topped at 9125 ft., apparently was gray. The new Guijarral Hills field is about midway between Pleasant Valley production and Kettleman Hills North Dome. Barnsdall's pool opener is on a down-dip on the Pleasant Valley field structure and found top of the Leda sand at 8658 ft. Barnsdall, meantime is drilling at 8552 ft. in Dessel No. 31-2-1 on Sec. 2-21s-16e. Allison No. 84-34 on Sec. 34-29s-16e has reached 8544 ft.

Cuyama Valley Work Widening

Richfield Oil's Perkins No. 1 on Sec. 27-10n-25w in Cuyama Valley is drilling at 9885 ft., after losing and recovering fish. The project probably will explore to 10,000 ft. The company's Hadley-Stone No. 1 on Sec. 25-11n-28w has been completed at 3409 ft. and shut in. It flowed an estimated 1500 barrels daily and proves up a short extension of the Whiterock pool. Cellar is being dug on the section for Hadley-Stone No. 2. F. R. Anderson No. 86-25 on Sec. 25-11n-28w is drilling at 2715 ft. Rickard-King No. 1 on Sec. 26-12n-30w has been spudded and is drilling beyond 200 ft. General Petroleum's Patterson No. 41-5 on Sec. 5-10n-28w is spot coring at 2425 ft. Locations falls on an acreage block obtained from Barmore & Associates. When Hancock Oil completed its Quality No. 67-31 in the Russell Ranch pool, it became the second operator to develop commercial production at Cuyama. The well was finished at 3300 ft. for 500 barrels of 33 gravity oil a day. Location is in Sec. 31-11n-27w, where the company is redrilling its Quality No. 45-31, which encountered a fault when near objective depth on primary operations. An effort will be made to whip the hole over into the pool.

Mountain View Project Added

Guy Cherry, Jr., has completed Mountain View No. 1 test on Sec. 29-30s-29e in the Mountain View area at 5805 ft. for an initial yield of 125 barrels daily. Texas Company at last reports was going on down at 6968 ft. in its Hogan-Bankline No. 1 wildcat on Sec. 4-31s-29e.

Cholame Test Rigs To Deepen

Cholame Oil Company is rigging up to deepen from 1505 ft. its Keller No. 1 exploratory hole on Sec. 18-25s-16e in the Cholame area of San Luis Obispo County.

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Dyer Creek Test Listed

W. R. Gerard, widely known independent operator of Santa Maria has staked Gerard-Cairns No. 1 on Sec. 11-26s-27e at Dyer Creek in Kern County. Drill site falls south and east of Shell Oil's Smith No. 56X-11 discovery well, which was completed at a depth of 2360 ft. in 1941 for an initial yield of 240 barrels a day. Dwindling production resulted in abandonment in March, 1944.

Corcoran Try Drills

Pacific Western is redrilling at 7535 ft. in Green Cattle No. 1, a hole once abandoned in Sec. 33-21s-23e near the town of Corcoran in Tulare County. The original operator was the von Glahn interests. At McKittrick, Pacific Western is fishing in its M. & N. No. A-14-30 on Sec. 30-30s-22e. Present depth is 2438 ft.

Richgrove Try Fails

Humble Oil & Refining is pulling out of its Di Giorgio No. 1 wildcat on Sec. 20-24s-26e in the Richgrove area of Tulare County, after an uneventful drilling journey to 5119 ft.

Kern River Test Staked

One mile southwest of the Kern River field, W. L. Giesler of Oildale has staked location for Surgener No. 1 wildcat on Sec. 7-29s-28e.

Mt. Poso Well Standing Cemented

Bradford Bishop's No. 14-1 test on Sec. 14-27s-28e on the Martin property near Mount Poso production is standing with casing cemented on top of Vedder oil sand at 954 ft. Total depth is 976 ft. The well is a short distance northeast of Signal Oil's abandoned Martin No. 1, which went unsuccessfully to 1070 ft.

Lemoore Try Quits

Following an electric log run, George F. Getty, Operator, has abandoned Orangeville Comm. No. 1 on Sec. 27-18s-20e in the Lemoore area of Kings County. Total depth is 9005 ft., with top Cretaceous at 8868 ft.

McDonald Try Digs

One mile northwest of production, the Mitchell Company is making hole below 1100 ft. in its No. 2 test on Sec. 12-28s-19e in the McDonald Anticline area, Kern County.

Panorama Test Digs

In the Panorama Hills of San Luis Obispo County, Western Gulf is drilling at 4350 ft. in its BACUS No. 1 on Sec. 8-31s-21e. Formation in recent digging apparently has been mostly hard sand and shale.

Tejon Hills Try Finds Oil

Tejon Hills Company is ready to complete on the pump its Tejon Hills No. 8 test on Sec. 10-11n-18w in the Tejon Hills in Kern County. Total depth is 430 ft., with top of oil sand at 382 ft. The company up to this writing has completed eight wells in the area. Four are now on production for approximately 180 barrels daily. No. 8 is likely to augment production to an aggregate rate of around 230 barrels a day. Location for No. 9 has been made on Sec. 25-12n-19w. Tide Water Associated is preparing to drill on Sec. 34-11n-19w. The well is called No. 34-9. CCMO Co.'s No. 110-32 deep try on Sec. 32-11n-19w is drilling at 3555 ft.

Carrizo Plains Wildcat Deeper

Drilling and coring has reached a depth of 4415 ft. in Union Oil's Wreden No. 1 explorer on Sec. 17-29s-17e in the Carrizo Plains area of San Luis Obispo County. At Lerdo in Kern County, Union has given up its Lerdo Comm. No. 55-14 on Sec. 14-28s-26e. Total depth is 5700 ft.

Blackwells Corner Wildcat Prospecting

British-American Oil Producing and Western Gulf are drilling ahead at 5615 ft. with their joint Deer No. B-85-21 on Sec. 21-26s-19e in the Blackwells Corner area, Kern County. British-American and Capital Company have foundation in for their Portals-Grayson No. 16A-3 on Sec. 3-20s-29e in the Race Track Hills area. Their Arvin B No. 14A-26 on Sec. 26-31s-29e at Arvin is ready to resqueeze, after cementing perforations at 7296 ft. Plugged depth is 7989 ft. and original bottom 8016 ft.

Mojave Test Fishing Bit

Bit is the object of a fishing job in Paul Beamer's No. 1 wildcat on Sec. 20-32s-36e in the Mojave area, Kern County.

Temblor Try Casing

Casing is being run in B. F. Delanty's No. 27 wildcat on Sec. 36-29s-20e in the Temblor area of Kern County.

Devils Den Well Drills

Gilliland Oil Company is drilling at 110 ft. with its Miller Bump No. 1 on Sec. 11-25s-18e in the Devils Den area. Logan-Green No. 1 on Sec. 10-25s-18e is idle at 650 ft. awaiting equipment. The company's Alferitz No. 1 and No. 4 on Sec. 14-25s-18e have suspended operations at 3260 and 517 ft., respectively.

Coastal and Northern District

Bolinas Test Drills Ahead

In the Bolinas area of Marin County, L. M. Lockhart is drilling ahead at 4960 ft. with R.C.A. No. 3-1 wildcat on Sec. 26-11n-8w. Some 45 miles north of Flagstaff in Arizona, the same operator is drilling a wildcat at 2400 ft.

San Benito Try Working

In a quest for a possible northward trend of Cuyama Valley oil development, Regent Oil Company is grading for its Baumgartner No. 1 on Sec. 26-17s-19e, San Benito County. The venture is on a block of leases embracing no less than 2000 acres, about 15 miles east of King City. Signal Petroleum of California is a holder of substantial acreage in the area. Gene Reid Exploration's Mayo-Hollister No. 1 on Sec. 16-12s-4e in the Sargent area has recovered drill pipe fish to 5500 ft. The hole is bottomed at 6079 ft.

Simi Wildcat Starting Work

Miles Andrews, well known Huntington Beach operator, has embarked upon a campaign for new oil in territory one mile south of the old Simi field in Ventura County. He announced the acquisition of Carillo Exploration Company's leases in that area containing Wiekhorst No. 1 well, which suspended drilling at 2950 ft. Andrews set surface casing and is now drilling ahead below 3200 ft. in the well. The well is on Sec. 21-2n-18w.

Monterey County Holds Spotlight

Monterey County continues to draw the exploratory interest of wildcatters. The latest entrant in the play in the county is Halvern L. Norris & Associates, sponsors of Saucito No. 1 on Section 4-16s-1e, two miles southeast of the town of Monterey. In the San Ardo area, Independent Exploration and Oceanic Oil have abandoned their Thurman No. 2 on Sec. 3-22s-9e. Total depth is 2212 feet in basement formation. The Cleveland-Barnsdall Ansberry No. 1 on Sec. 2-22s-9e is shut in temporarily at 1347 ft. Jergins Oil and North American are drilling at 2375 ft. with Orradre No. 152-12 on Sec. 12-23s-10e. No. 150-12 on the section has been completed on the pump for 145 barrels a day from 2130 ft. Texas Company's Orradre Two No. H4-13 on Sec. 13-23s-10e is pulling rods and tubing for some remedial work. Bottom is 3034 ft. No. F8-13 and No. F4-13 on the section are locations. Aurignac One No. 4 on Sec. 4-23s-10e is drilling ahead below 1000 ft.

In the Peachtree Bow area, California Land & Cattle Company has staked location for a test well on Sec. 15-19s-10e. Texas Company is in the completion stage with Ringaman No. 1 on Sec. 35-20s-11e. Total depth is 3326 ft., with plug at 1796 ft.

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Barnsdall Oil's P. W. & P. No. 1 wildcat in the Bradley area on Sec. 29-23s-11e is drilling at 2650 ft.

Chatsworth Try Staked

Location is staked for Regent Oil Company's Runkle No. 1 explorer on Sec. 14-2n-17w in the Chatsworth area, Ventura County.

Sespe Test Shows Oil

With oil and gas reported showing on the ditch, Merchants Petroleum Corporation is drilling ahead below 2300 ft. in Bonebrake No. 1 on Sec. 6-4n-19w in the Sespe area in Ventura County.

Santa Ynez Try Drilling

Near Santa Ynez Peak in Santa Barbara County, Ohio Oil Company is drilling at 4585 feet in Unit No. 1 prospect on Sec. 1-5n-20e.

Los Alamos Test Reams

Amerada Petroleum has reached 8157 ft. in its Tognazzini No. 1 on Sec. 14-8n-33w at Los Alamos in Santa Barbara County and is reaming.

Guadalupe Well Pumps

Completed on the pump for 200 barrels daily, Continental Oil's Sand Dune-LeRoy No. A-1 on Sec. 2-10n-36w at Guadalupe in San Luis Obispo County at last reports was producing 42 barrels a day. Finishing depth is 2766 ft.

Goleta Venture Redrilling Ahead

Redrilling has reached 5675 ft. in Honolulu Oil's Honolulu-Signal-Macco-State No. 309-3 on Sec. 19-4n-28w in the Goleta area, Santa Barbara County. The first drill went to 5573 ft.

Casmalia Try Spuds

Union Oil has spudded its Jesus Maria No. 2 on Sec. 34-9n-35w in the Casmalia area and is drilling ahead below 850 ft. Wickenden No. 3-28 wildcat on Sec. 28-9n-32w at Olivera Canyon is making hole ahead at 5000 ft. McCroskey No. 4 on Sec. 20-9n-32w is preparing drill directionally, after milling window at 3766-3790 ft. Total depth is 5102 ft.

Texas Co. Running Test

In the Refugio area of Santa Barbara County, Texas Company is running tests with its Johnson No. 1 on Sec. 26-5n-31w, with hole bottomed at 3352 ft.

Montalvo Developing

Standard of California's Ventura County Mortgage Co. No. 59-1 on Sec. 24-2n-23w in the Montalvo area is drilling deeper at 10,430 ft. At North Montalvo, Superior Oil Company is digging at 12,100 ft. in Limoneria No. 1 on Sec. 9-2n-22w on an expansive lemon ranch there.

Santa Rosa Wildcat Digs

On picturesque Santa Rosa Island off the Santa Barbara Coast, Signal Oil & Gas is drilling at 3400 ft. in Soledad No. 1 on Twp. 2s-31w. Honolulu and Macco Corporation also are interested in the test.

Santa Margarita Wildcat Staked

Still a location is Santa Margarita Land & Cattle Company's China Gardens No. 1 wildcat on Sec. 16-29s-13e near Santa Margarita, San Luis Obispo County.

Timber Canyon Well Producing

In Timber Canyon in Ventura County, Richfield Oil has developed a new producer with its E. P. Clark No. 1 on Sec. 13-4n-21w. The project at last reports was pumping 26 barrels a day from 3853 ft. At Sulphur Mountain, the company is swabbing A. W. Freeman No. 2 on Sec. 21-4n-22w. Total depth is 2478 ft., and casing is set at 1325 ft. Ojai No. 58 on Sec. 14-4n-22w at Ojai is drilling at 3200 ft. No. 61 on the section is pumping an unestimated yield from 3500 ft. No. 63 is drilling below 2300 ft. Travis-Exeter No. 1 on Sec. 22-4n-22w failed to turn up anything of interest and has been given up at 4344 ft. as a duster.

Bardsdale Well Starts

Cleveland Oil Company is rigging up for its Elkins No. 4 on Sec. 7-3n-19w, offsetting Bardsdale Oil's Elkins No. 2 producer in the Bardsdale field. Tracy Harkness is the contractor for Cleveland on the well, which is the first of four programmed for the area. Beloil Corporation has spudded Elkins No. 3 on Sec. 5-3n-19w and is drilling at 500 ft.

Oxnard Adds Well

Exeter Oil Corporation has completed its Scholle-Livingston No. 1 on Sec. 6-1n-31w in the Oxnard area for an unestimated output from a finishing depth of 2930 ft.

McDonald Test Starts Drilling

In the McDonald Island area of San Joaquin County, Universal Consolidated has spudded its Pacific States No. 1 gas test on Sec. 24-1n-4e and is drilling ahead below 600 ft.

Willow Try Digs

At Willow in Glenn County, Shell Oil is going deeper at 5735 ft. with its James No. 1 gas test on Sec. 1-19n-5w.

Fairview Try Quits

The Fairview area of Orange County failed to smile on Standard of California's efforts to develop new oil and the venture has been abandoned at 7275 ft. It was labeled Turley No. 1 and located on Sec. 4-6s-10w.

Canoga Park Test Idling

Canoga Oil Company's Knapp No. 5 in the Canoga Park area on Sec. 4-1n-17w is idle at 350 ft. The well is on the Knapp Ranch, where some years ago oil showed up in a water well.

Sunnyvale Wildcat Quits

On Sec. 17-23s-26e near Sunnyvale in Tulare County, Jergins Oil has relegated to history its Cal-Grape Land Co. No. 84 wildcat. The hole went to 4398 feet and in so doing topped schist at 4320 ft.

Middle Dome Test Drills

Middle Dome Corporation continues to drill steadily ahead at 8700 ft. with its No. 52-30V test on Sec. 30-23s-19e in the Middle Dome wildcat area of Kettleman Hills.

Lost Hills Wildcat Set

Lost Hills area will be the scene of a new wildcat test sponsored by Richfield Oil on Sec. 11-26s-20e. It will be tagged Fee E No. 1 on Sec. 11-26s-20e. The company is grading for Buaas No. 61-25 on Sec. 25-31s-25e at Paloma. Lakeside No. 67-31 on Sec. 24-31s-25e is redrilling at 10,680 ft.

Arvin Test Grows Deep

Drilling has reached 13,400 ft. and continues on deeper in Ohio Oil Company's interesting wildcat test on Sec. 3-32s-29e in the Arvin area.

Pattiway Try Drills

Approximately 18 miles south of Cuyama production, Petroleum Reserve Corporation is drilling Klipstein No. 42-18 on Sec. 18-10n-23w in the Pattiway area. Depth last reported was 5017 ft. The well is on property owned by the Klipstein interests, long identified with the raising of cattle and the breeding of thoroughbred horses.

Greeley Try Deep

Standard of California No. 1-21, a deep test on Sec. 7-29s-26e near the Greeley field, is making progress with the drill below 13,000 ft.

La Hacienda Test Fishing

Tester is being fished in Shell Oil's Hacienda No. 1 prospect job on Sec. 12-24s-20e in the La Hacienda area, Kings County. The venture was drilled to a total depth of 5015 ft. before the hole was plugged back to 3630 ft. Electric log and geophone have been run.

Edison Test Rigging Up

On Sec. 17-30s-29e in the Edison area, First National Finance Corporation is rigging up to spud its DeMille-First National-Jeppi No. 3 interrogator.

Greeley Try Digs

General Petroleum's KCL-Calder No. 38-23 wildcat in the Greeley area on Sec. 23-29s-25e is making hole beyond 8700 ft. Sunset No. 2A-363 on Sec. 2-11n-24w at Midway-Sunset is standing at 5168 ft.

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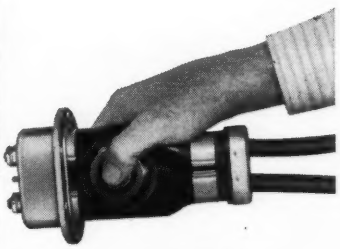

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Personalities IN THE NEWS

M. E. Spaght to Succeed Lacomble as President of Shell Development Co.—Lacomble to be Chairman of Board

M. E. Spaght, vice president of Shell Development Company, will succeed A. E. Lacomble as president on January 1, 1949, when Lacomble becomes chairman of the Board, it was announced recently by Alexander Fraser, president of Shell Union Oil Corporation, of which Shell Development is the research affiliate. Spaght will move from New York to the Company's headquarters in San Francisco, and Lacomble will go to New York.

A. E. Lacomble

A California-trained scientist, Spaght received his Ph.D. degree in chemistry from Stanford University and took further work at the University of Leipzig before joining Shell Oil Company in 1933 as a research chemist in the Company's Martinez Refinery. In 1940 he was made manager of manufacturing research and development at San Francisco, and during the next five years he supervised planning and processing of Pacific Coast refining expansion for wartime production. Early in 1945, he went to Europe as a member of the U. S. Naval Technical Mission, and later the same year he went to Japan as a director of the U. S. Strategic Bombing Survey. Upon his return in December, 1945, he was made manager of manufacturing West of the Rockies and held that position until he was appointed vice president of Shell Development Company in May, 1946.

M. E. Spaght

Lacomble, Shell Development's president since 1943, began his career in petroleum research and development when he joined Shell in 1920 after receiving his doctorate in science from the University of Leyden in Holland. He served five years in the Dutch East Indies, and, in 1926, became assistant superintendent of Shell's Martinez, California, Refinery. Ten years later he was made vice president in charge of manufacturing for Shell Petroleum Corporation in St. Louis. After other executive assignments in the interest of Shell companies, he was elected chairman of the executive committee of Shell Development, the position he held until he became president.

A number of California operators have extended their field activities to the Abilene area, the hub of a Texas oil development campaign. California drillers and lease holders in the area include D. R. Young, Emmett Doherty, A. A. Altman, A. N. Petty, Capital Company, Oceanic Oil, and Independent Exploration.

C. D. Gard, chief process engineer for Union Oil was the featured speaker at the meeting of the California Natural Gasoline Association at the Rio Hondo Golf Club at Downey.

George L. Randall, district representative on the West Coast for the Oil Industry Information Committee, was among members of the California petroleum industry in attendance at the meeting in Chicago of the American Petroleum Institute.

W. B. (Wally) Curtis, public relations and advertising director of General Petroleum, was a recent Salt Lake City visitor to be the principal speaker at the meeting of the Salt Lake Advertising Club. His topic, as might have been expected, was public relations.

H. H. (Bob) Roberts, Standard of California chief publicist at Los Angeles, will be one of the principal speakers at the California state chamber of commerce annual meeting at San Francisco in December. Roberts will discuss the travel and recreational program which will feature the meeting.

Don Riley, who recently resigned as superintendent for the Bartholomae Corp., has accepted a position as geologist and petroleum engineer with F. R. Anderson Associates of Santa Maria. Don's many friends in the oil industry wish him the best in his new position.

William James Vizzard, 62, Bakersfield's first chief of police died after a long illness. Vizzard, formerly a city marshal, became chief when the Bakersfield police department was organized in 1915 and served for three years. During World War I, he was head of Standard Oil's wartime secret service force.

F. S. Fowler, production engineer for Standard of California, spoke on "Emery West Pool Gas Injection Project in West Coyote" at the meeting of the American Institute of Mining and Metallurgical Engineers, petroleum technology group at Ethyl Auditorium in Los Angeles.

The recent meeting of the Petroleum Accountants Society in Los Angeles was highlighted by presentation of a film on "Deep Horizons" through the courtesy of R. C. Herbst of The Texas Company.

Texas Company announces a number of promotions in its foreign operations depratment. F. C. Sealey has been advanced from general manager of the department to assistant to the vice president. W. H. Farrand succeeds Sealey as general manager. J. F. McCulloch has been made assistant general manager and W. L. Clark becomes manager. The department is in charge of C. E. Olmsted, vice president of the company.

Warren H. Crowell heads the Milloil Investment Company of Los Angeles, recently organized to acquire and develop oil properties throughout the state.

Bob Lemon, Cleveland's pitching star in the recent world series baseball games, was royally welcomed home at Long Beach by his father Pop Lemon, Signal dealer at Termino and 4th streets. A host of major and minor ball-players living in Southern California were on hand for the occasion.

Approximately 15 million persons in five Pacific states are using double the amount of petroleum products the 10 million consumed who lived here before the war. Each individual is using 75 per cent more energy of all types than prewar residents did and 90 per cent of the energy consumed in the West is petroleum-derived. C. S. Beesemyer, executive vice president of General Petroleum, called attention to these pertinent facts in an address before the Stanford Graduate Business School Alumni Association in Los Angeles.

Tossing a coin is the time-honored custom of Mid-Continent oil men in deciding on what basis who will do what in any joint drilling agreement. Principals set down contracts on terms they consider fair from the standpoint of the actual operator and the one or more parties interested in the drilling of a well. The part any of the principals ultimately play under contractual arrangements is determined subsequently by heads or tails and an equitable deal for all concerned is assured. Thomas W. Simmons, president of Bolsa Chica Oil Corporation, points out that this same practice is growing among California oil men and so far has proved eminently popular.

The above photograph shows the foreign guests who attended the November meeting of the Los Angeles Chapter of Nomads.

Seated left to right: R. L. Jewell of the V. O. C. Shell of Venezuela; C. L. Rynd of The Texas Petroleum Corp. of Venezuela; R. H. Deem of the Shell Oil Co. and Charles R. Massy of Neal & Massy Engineering Co., Ltd. Standing, left to right: William Wallis of the Creole Petroleum Corp.; V. E. Duclos of the Canadian Government; S. W. Evinger of the Socony Vacuum Oil Co., and A. E. Rose of Neal & Massy, Ltd.

Lawson Joins Perry Kilsby Inc.

Perry Kilsby, President of Perry Kilsby Inc., announced on Dec. 1st appointment of Mr. R. R. (Ray) Lawson as manager of the company. Formerly Kilsby-Harmon Inc., Perry Kilsby Inc. specializes in Steel Tubular products. "Mr. Lawson's many years with the Tubular Steel business adequately qualify him for this position," said Mr. Kilsby.

Mr. Lawson spent thirty years with the Summerill Tubing Company at Brideport, Pa., working in all phases of the operation there. Starting in production, Mr. Lawson worked through all departments to the Executive Vice Presidency, which position he held for seven years. During the war, Mr. Lawson served on the highly important Tubular Advisory Committee of the War Production Board, leaving in 1945 to accept the Presidency of Ellwood Ivins Steel Corporation Works at Philadelphia.

Mr. Kilsby stated that "Ray Lawson decided to join us when he realized how great the industrial expansion of the West is and what a wonderful place it is in which to live . . ." Mr. Lawson agreed emphatically and pointed out that "industrial growth is the best foundation of economic strength. Business is based on making the best possible effort to serve well, and I think Perry Kilsby Inc. can serve in the Tubular Steel business very well."

Milton L. Kane of Morris Estates Company of San Francisco was a recent business visitor in Los Angeles. While in the Southland, he maintained headquarters at the Hollywood Knickerbocker Hotel. His interests extend to oil areas throughout the state.

News received in Washington from overseas intimated that the French Government had advanced gasoline prices to an equivalent of 85 cents a gallon.

Schlumberger Receives Award

Schlumberger Well Surveying Corporation and Carl A. Johnson, Schlumberger export expeditor, were recently awarded the William H. McGee and Company trophy in the first annual national competition among companies engaged in export business. The award was given for having the lowest percentage of lost or damaged export shipments during the past year.

Carl Johnson and the elaborate McGee Award.

With export shipments which totaled nearly a million and a half dollars to 18 different countries throughout the world, the Schlumberger reported loss was only $87.-18. The shipments involved more than 1600 boxes which ranged in size from radio tubes to complete Schlumberger truck units.

The William H. McGee Company, marine underwriters, began the export crating and shipping competition to encourage better and sturdier packing for foreign shipments. Since the war, it is reported that losses on all overseas shipments have risen sharply.

The McGee Company announced the competition in connection with the Annual Convention of Industrial Packing Engineer's Association, a national association with representation from all large export shippers.

The McGee award, which is an elaborate gold trophy with a large base simulating an export package, will remain in the possession of the Schlumberger organization for one year.

Perry Kilsby Announces New Corporation Name

Perry Kilsby announced recently the reorganization of his company and the change in the company's name from Kilsby-Harmon Inc. to PERRY KILSBY INC. The company will continue to serve western industry from its Los Angeles headquarters and offices in San Francisco and Seattle. Mr. Kilsby, company President, stated that his organization will concentrate on serving industry with a complete line of steel tubing and will endeavor to maintain varied and complete warehouse stocks in order to provide prompt delivery. "Practically every type of steel tubing in most alloys, carbon, and stainless will be on hand for the many western users, among which are the refineries, food processors, wineries, and furniture manufacturers," he said.

"We have recognized for a long time how important it is to work closely with our customers, and, with that thought in mind, we have enlarged both our sales department under Mr. C. L. Brown, Vice President, and our warehouse under our new manager, Mr. R. R. Lawson. Now we feel that we are in a position to give the best possible service without costly delays," Mr. Kilsby stated further.

New policy of the company calls for consistency in sales and service operations by establishing sales contact through men especially trained to assist in every way those using Tubular Steel. These men will handle routine requirements with efficiency because of this specialized knowledge of the business. In instances where special information is needed for particular tubing problems, the company has available the services of Mr. P. D. McElfish, metallurgist and Past President, West Chapter, American Metal Society. Mr. Kilsby concluded by stating that "every Tubular Steel need of western industry will receive prompt attention, and all possible assistance of benefit will be available."